



THE SCHOOL OF PUBLIC POLICY

MASTER OF PUBLIC POLICY CAPSTONE PROJECT

Psychotherapy in Alberta: Favorable Returns on Investment Resulting from Integrating Psychological Care into Primary Care Networks

Submitted by:

Mason P Stott

Approved by Supervisor:

Dr. Jen Zwicker, on August 16, 2016

Submitted in fulfillment of the requirements of PPOL 623 and completion of the requirements for the Master of Public Policy degree



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Acknowledgements

I would like to thank Dr. Jen Zwicker and Dr. Herb Emery for their guidance and critical feedback regarding this Capstone document. Your efforts allowed me to greatly improve the report and its findings.



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Capstone Executive Summary

Untreated mental illness costs Alberta's healthcare system an annual \$2.3 billion in excess costs.¹ These costs occur because many mentally ill patients are not properly treated. Rather than being treated in preventative methods, patients find themselves in more expensive hospital-delivered acute care. This issue is relevant in today's policy realm because it represents a unique opportunity for the province of Alberta to realize large cost-savings, and to avoid hundreds of millions of dollars in excess costs to the provincial healthcare system.

The relevant literature, family physician opinions, and various case studies illustrate how providing psychological care in an integrated manner is the most promising means of delivering a new program. Integrating such treatment into primary care facilities results in higher patient satisfaction, greater follow-up rates, superior patient recovery, and less mortality.

Costs and cost-savings were determined for three different scenarios. Each scenario represents a unique way of delivering PCN-integrated psychological treatment. Scenario 1 offers internet-delivered therapy to all patients. Scenario 2 offers face-to-face therapy to all patients. Scenario 3 combines the two scenarios and offers a mixed model of internet-delivered psychotherapy for mildly mentally ill patients and face-to-face therapy for seriously mentally ill patients. Upon conducting the economic analysis, the Dunning Funnel, ROI and cost-savings estimates, and ease of project implementation were used to choose one recommendation: Scenario 2 was chosen. Scenario 2 offers returns on investment of approximately 434 per cent, and cost-savings of approximately \$415,794,000. Costs for the Scenario are estimated at \$77,455,521.

Before Scenario 2 is fully scaled-up across the province, it is recommended that first it is implemented as a local pilot project – implemented in one PCN rather than in all of Alberta's 42 PCNs. This will allow for more viable implementation and superior mitigation of financial risk. Furthermore, it will allow for shortcomings of the program to be solved before the project is fully scaled to the provincial level. Consultation plays an important role in this proposed integrated psychological care program. All directly involved healthcare practitioners, including: family physicians, psychiatrists, psychologists, social workers, and nurses, must all be heavily consulted. This must be done in order to gain valuable insight into how best to offer such a proposed program, as well as in order to gain the support of these powerful players in the healthcare community. Communication will play an important role during the implementation stage. A Director of Communications will need to effectively navigate and manage the media in regards to the implementation of Scenario 2. Eventually, funds may be reallocated from existing healthcare departments (such as the Emergency Department and inpatient services) to further finance the ongoing operations of Scenario 2.

Better treatment of mental illness in Alberta represents a unique opportunity to save the province money – on the scale of hundreds of millions of annual dollars. All moral reasons for providing care to the ill aside, the financial savings from investing in mental health are the ultimate findings of this report.

¹ $3,645,257/34,340,000 = 10.6\%$; $\$48.6 \text{ B [Smetanin et al]} * 10.6\% = \5.16 B ; $\$5.2 \text{ billion} * 43.8\% = \2.3 billion (43.8% taken from Smetanin et al. 2011 study)

1.0 Introduction – Issue and Background

1.1 Issue: What is the Problem?

Untreated mental illness costs Alberta's healthcare system an annual \$2.3 billion.² The present value of the cumulative economic cost for Canada over the years 2012 – 2041 is in excess of \$2.5 trillion.³ Experts consider these values to be underestimates. Furthermore, these financial values do not include the following: social services costs, educational costs, judicial costs, costs for provision of services for youth, costs related to losses in health-related quality of life, and costs of informal care givers. There is compelling evidence to treat Canada's mental illness patient population, simply for the economic cost-savings that will accrue, specifically the costs that will be avoided within each province's healthcare system.⁴ While the 2011 economic impact of mental illness in Canada was \$48.6 billion,⁵ there is also a human toll: 3926 Canadians committed suicide in 2012,⁶ and 531 Albertans committed suicide in 2014.⁷

Mental illness can be treated through various procedures. One of the leading methods, psychotherapy, is defined as “a way to treat people with a mental disorder by helping them understand their illness.”⁸ While 91 per cent of Canadians have access to medication,⁹ citizens do not have as great of access to psychotherapy and are hesitant to seek out the services of

² $3,645,257/34,340,000 = 10.6\%$; $\$48.6 \text{ B [Smetanin et al]} * 10.6\% = \5.16 B ; $\$5.2 \text{ billion} * 43.8\% = \2.3 billion (43.8% taken from Smetanin et al. 2011 study)

³ Smetanin et al, “The Life and Economic Impact of Major Mental Illness in Canada: 2011 to 2041,” *Risk Analytica*, 2011.

⁴ Ibid.

⁵ Ibid.

⁶ Suicide Statistics for Canada, Centre for Suicide Prevention, <https://suicideinfo.ca/Library/AboutSuicide/Statistics.aspx>.

⁷ Ibid.

⁸ Psychotherapies, National Institute of Mental Health, <http://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml>.

⁹ Erin Anderssen, “The case for publicly funded therapy,” *The Globe and Mail*, May 22, 2015, <http://www.theglobeandmail.com/life/the-case-for-publicly-funded-therapy/article24567332/>.

counselling.¹⁰ Therefore, there exists a need to increase citizens' access to psychological services, more than access for prescribed medication. The issue that this policy Capstone investigates is how best to alleviate this annual \$2.3 billion cost to Alberta's healthcare system, through the public-financing of psychological services. This Capstone investigates whether or not it is financially worth treating Alberta's mentally ill population in a preventative manner, rather than waiting for mentally ill patients to eventually find themselves in Alberta's acute care hospitals. The current state of psychological care, as Freud himself conceded, is that "the optimum conditions for (psychoanalysis) exist where it is not needed – ie., among the healthy."¹¹

1.2 Background

1.2(1) What is Mental Illness?

One in five Canadians experience mental health issues at some point in their lives, and those with severe mental illnesses die 25 years younger than the average Canadian.¹² "Mental illness refers to conditions that affect cognition, emotion, and behavior,"¹³ and include such illnesses as schizophrenia, bipolar disorder, obsessive-compulsive disorder, post-traumatic stress disorder, depression, and generalized anxiety, among others. Furthermore, "Most psychiatric disorders are characterized by a chronic and complex nature and recurring episodes of acute symptoms."¹⁴

¹⁰ G. Myhr & K. Payne, "Cost-Effectiveness of Cognitive-Behavioural Therapy for Mental Disorders: Implications for Public Health Care Funding Policy in Canada," *Canadian Journal of Psychiatry*, 51(10) (2006), <http://ezproxy.lib.ucalgary.ca/login?url=http://search.proquest.com/docview/222798279?accountid=9838>.

¹¹ Horwitz, "Creating mental illness," *The University Chicago Press*, 2002.

¹² The Facts, Mental Health Commission of Canada, last modified 2012, <http://strategy.mentalhealthcommission.ca/the-facts/>.

¹³ Mandersheid, Ryff, Freeman, McKnight-Eily, Dhingra, Strine, "Evolving Definitions of Mental Illness and Wellness," *Preventing Chronic Disease*, 7(1): A19, 2010.

¹⁴ Vanderplasschen, Rapp, Pearce, Vandeveld, Broekaert, "Mental Health, Recovery, and the Community," *The Scientific World Journal*, 2013, <http://dx.doi.org/10.1155/2013/926174>.

Researchers have framed mental illness and mental health on a continuum, with mental health on one end and mental illness on the other.¹⁵ Someone with mild anxiety would be placed on the continuum closer to the mental health side, while someone with severe schizophrenia would be placed closer to the mental illness side. This continuum is useful in framing mental illness and mental health, because each patients' situation is unique, and has varying degrees of severity and impairment. Dr. Insel, director of the National Institute of Mental Health, advocates that mental illnesses are no different from other physical illnesses: "The only difference here [in the case of mental illness] is that the organ of interest is the brain instead of the heart or pancreas. But the same basic principles apply."¹⁶

1.2(2) Methods of Treatment

Prior to the mid-20th century, mental asylums aimed to treat mental illness. These institutions were not effective and were eventually downsized and closed out, in favour of community mental health care such as psychologists, nurses, and social workers.¹⁷ Psychotherapy has replaced these mental asylums.

There is no cure available for mental illness. However, mental illness can be treated and effectively managed. There exist a variety of treatment methods, ranging from surgery to talk therapy. Talk therapy is also known as psychotherapy, and there exist a variety of forms of psychotherapy. Cognitive behavioural therapy (CBT) is one type of psychotherapy, and can be widely used to treat many different types of mental illness.

CBT helps a person focus on his or her current problems and how to solve them. Both patient and therapist need to be actively involved in this process. The therapist helps the

¹⁵ Pierre, "Mental Illness and Mental Health: Is the Glass Half Empty or Half Full?" *Canadian Journal of Psychiatry*, 57(11): 651-658, 2012.

¹⁶ Weir, "The roots of mental illness," *American Psychological Association*, 43(6): 30, 2012, <http://www.apa.org/monitor/2012/06/roots.aspx>.

¹⁷ Drake, Latimer, "Lessons learned in developing community mental health care in North America," *World Psychiatry*, 11(1): 47-51, 2012.

patients learn how to identify distorted or unhelpful thinking patterns, recognize and change inaccurate beliefs, relate to others in more positive ways, and change behaviors accordingly.¹⁸

CBT can be used to treat a variety of mental illnesses, such as depression, anxiety, obsessive-compulsive disorder, bipolar disorder, and schizophrenia.

Dialectical behaviour therapy (DBT) is a form of CBT. It is used to treat people with borderline personality disorder, and involves discussing two opposing views until a logical balance of the two extremes is reached. Although effective for borderline personality disorder, DBT has limited other applications.

Interpersonal therapy (IPT) is used to treat depression. It focuses on improving communication patterns and the ways patients relate to other people. In this way, depression can effectively be treated. Studies are varied on the effectiveness of IPT, although in general the evidence tends to illustrate IPT is effective in the treatment of depression.¹⁹

Family-focused therapy (FFT) is used to treat bipolar disorder and involves the patient's family in the process. While FFT can be beneficial for both the patient and the patient's family members, one of the drawbacks of this type of therapy is that family members are not always available for therapy sessions. FFT is limited to treating bipolar disorder.

Psychodynamic therapy is a very different type of therapy from the above. Psychodynamic therapy focuses on treating the patient's unconscious mind and past experiences. Psychodynamic therapy

¹⁸ Psychotherapies, National Institute of Mental Health, <http://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml>.

¹⁹ Ibid.

can be used to treat various types of mental illness, just as CBT can. Psychodynamic psychotherapy requires more sessions, and is therefore more expensive for the client, than CBT. One of the issues with effectively treating a mentally ill patient with psychodynamic therapy is in its length. Short-term psychodynamic psychotherapy ranges from 21 sessions to 31 sessions.²⁰ Long-term psychodynamic psychotherapy ranges from 50 to 150 sessions.²¹ CBT typically runs for 12 sessions.²² The long treatment times of psychodynamic therapy may lead to issues of eventual patient dropout, as well as costly services to the patient. Although lengthy, some psychologists claim that psychodynamic therapy results in more long-term benefits than CBT.

Pharmacotherapy, treating mental illness through the use of medication, is also a means of treatment. Medication can be used on its own or in combination with other types of therapy. Anti-depressants, anti-psychotics, anti-anxiety drugs, and mood stabilizers are all types of medication used to treat mental illness. Medication falls outside of Medicare in Canada. Medication also usually results in unwanted side-effects for the patient.

Deep brain stimulation (DBS) involves implanting electrodes into the patient's brain and sending electrical pulses to the targeted brain tissues. While DBS has been found to be effective,²³ it is only used to treat severe cases of depression and obsessive-compulsive disorder. DBS is still a relatively new type of treatment, and more studies are required to gauge efficiency. Costs of required bilateral

²⁰ Jonathan Shedler, "The Efficacy of Psychodynamic Psychotherapy," *American Psychologist*, 65(2): 98-109, March 2010, doi: 10.1037/a0018378.

²¹ Ibid.

²² Adam Brimelow, "Demand for NHS 'therapy network'," *BBC News*, November 22, 2005, <http://news.bbc.co.uk/2/hi/health/4174082.stm>.

²³ Mayberg et al, "Deep brain stimulation for treatment-resistant depression," *Neuron*, 45(5): 651-660, 2005, doi: 10.1016/j.neuron.2005.02.014; Jimenez-Ponce et al, "Preliminary study in patients with obsessive-compulsive disorder treated with electrical stimulation in the inferior thalamic peduncle," *Neurosurgery*, 65(6): 203-209, 2009.

DBS surgeries range from \$70,000 to \$100,000.²⁴ The drawbacks of DBS is that it can only treat depression and OCD, and that it is relatively expensive when compared to psychotherapy delivered by a psychologist.

Inpatient psychiatric care costs \$771 per day for schizophrenia,²⁵ \$808 per day for bipolar disorder,²⁶ and \$832 per day for depression.²⁷ Inpatient care involves patients spending anywhere from one week to three months in a hospital. It requires the patient to remain at the hospital for the duration of the treatment. During this time, the patient will focus solely on recovery, and will not work or travel. While inpatient care can be effective as a last resort for severely mentally ill patients, the drawbacks of inpatient treatment centers include: the cost associated with such treatment, the patient being cut-off from the community and society as they permanently stay in the treatment centre, and the inability for the patient to continue to be employed. Inpatient facilities require patients to live at the treatment facility for the duration of the stay.

Section 2.2(4) explores the appropriateness of CBT versus psychodynamic psychotherapy. These two types of treatment have been chosen, from those mentioned above, because they are the most widely applicable and can treat varying types of mental illness. Furthermore, they are relatively inexpensive when compared with DBS and inpatient treatment. Lastly, they allow the patient to continue to be employed, to regularly interact with friends and family, and to interact with society.

²⁴ Okun, Zeilman, Guide to Deep Brain Stimulation Therapy, page 17, 2014,

http://www.parkinson.org/sites/default/files/Guide_to_DBS_Stimulation_Therapy.pdf.

²⁵ \$8509/11.1 days = \$767/day; \$5707/7.4 days = \$771/day; [Stensland, Watson, Grazier, "An examination of costs, charges, and payments for inpatient psychiatric treatment in community hospitals," *Psychiatric Services*, 63(7): 666-671, 2012, doi: 10.1176/appi.ps.201100402.]

²⁶ \$7593/9.4 days = \$808/day; \$4356/5.5 days = \$792/day; [Stensland, Watson, Grazier, "An examination of costs, charges, and payments for inpatient psychiatric treatment in community hospitals," *Psychiatric Services*, 63(7): 666-671, 2012, doi: 10.1176/appi.ps.201100402.]

²⁷ \$6990/8.4 days = \$832; \$3616/4.4 days = \$822; [Stensland, Watson, Grazier, "An examination of costs, charges, and payments for inpatient psychiatric treatment in community hospitals," *Psychiatric Services*, 63(7): 666-671, 2012, doi: 10.1176/appi.ps.201100402.]

Psychotherapy is most effective when used in conjunction with prescribed medication.²⁸ Since 91 per cent of patients have access to medication,²⁹ publicly-financing prescribed medication is considered to not only be out-of-scope of this Capstone document, but also not even required.

²⁸ Hunsley, Elliott, Therrien, “The Efficacy and Effectiveness of Psychological Treatments” *The Canadian Psychology Association*, 2013,

http://www.cpa.ca/docs/File/Practice/TheEfficacyAndEffectivenessOfPsychologicalTreatments_web.pdf.

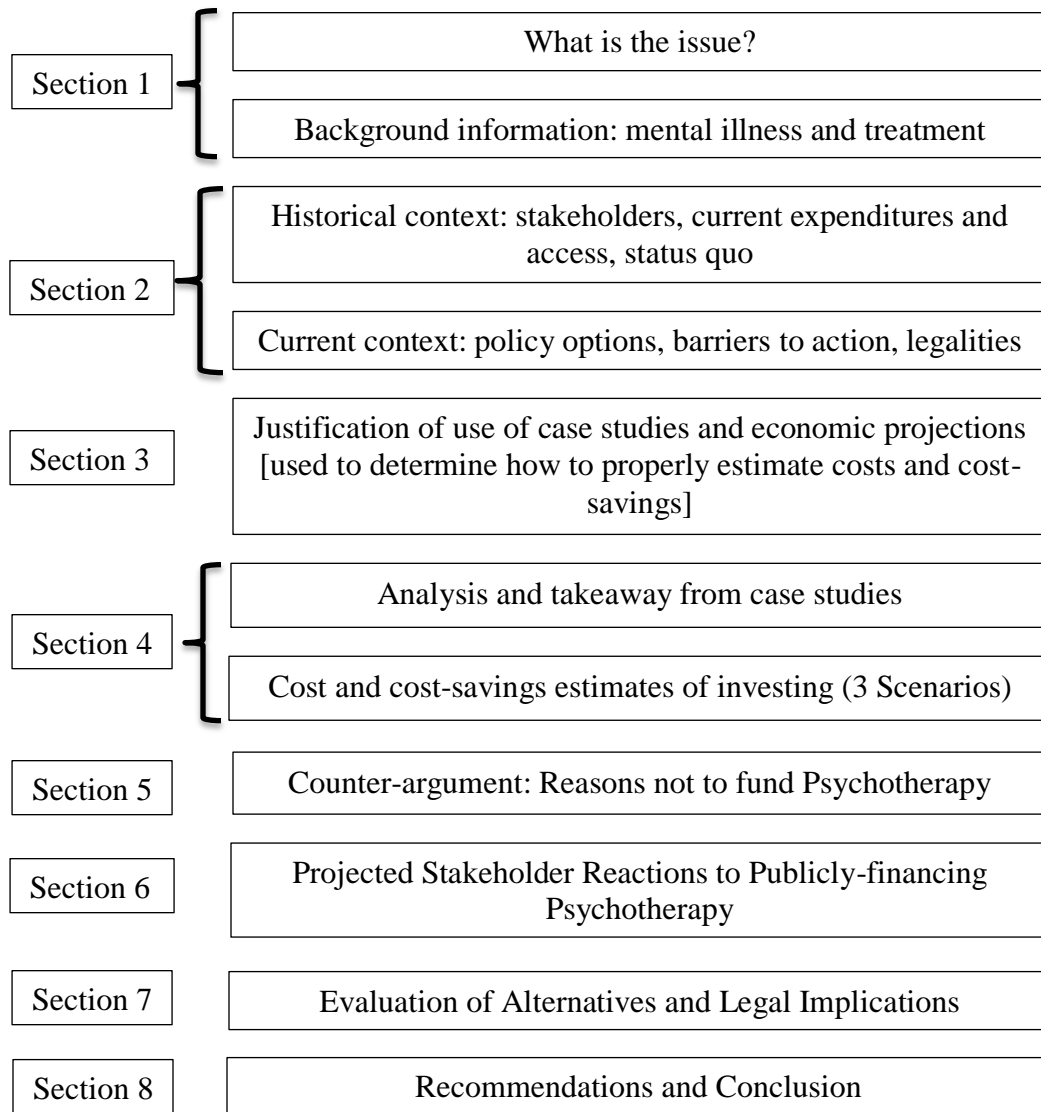
²⁹ Erin Anderssen, “The case for publicly funded therapy,” *The Globe and Mail*, May 22, 2015,

<http://www.theglobeandmail.com/life/the-case-for-publicly-funded-therapy/article24567332/>.

1.3 Roadmap

The following figure provides a roadmap of the researcher's Capstone document:

Figure 1: Capstone Roadmap



2.0 Literature Review

2.1 Historical Context

2.1(1) Affected Stakeholders

The following is a list of stakeholders that would be affected by the implementation of any program meant to address and treat mental illness:

Table 1: Affected Stakeholders

Stakeholder:	How they will be affected by enhanced access to mental health treatment:
Those living with a mental illness	greater access to proper treatment, improved quality of life, longer life span, greater participation in the workforce
Those living with a mental illness (low-income and at-risk)	May continue to face barriers in accessing mental health treatment
Those who know someone with a mental illness	Would see loved ones receive treatment they require, less emotional and financial stress due to loved ones leading more stable lifestyle
Medical doctors (namely family physicians)	Will spend less time treating mentally ill patients, as proper psychological care will treat those with a mental illness (which is where proper treatment should be directed in the first place), less utilization of acute care services from those with a mental illness
Psychologists	Some psychologists will be required to relocate to existing doctor's clinics, as part of the move to integrate multi-disciplinary teams into one location. Privately practising psychologists will experience a decrease in demand for their services.
Psychiatrists	May oppose any requirement of relocating to provide support for existing doctor offices, as many have their own clinics (difficult to relocate to doctor offices because there is a large shortage of psychiatrists in Alberta, and many are required to work in hospitals and specialty clinics) ³⁰
Behavioural health consultants	May see roles change from one of mental health treatment to acting as a gatekeeper to any model implemented (psychologists will now treat patients for mental health issues)
Politicians	Will need to justify financial expenditures vs. the long-term benefits of improved access to psychological care (costs recouped through healthcare cost recovery)
Employers	will experience productivity increases as employees have access to proper care

³⁰ Konrad TR, Ellis AR, Thomas KC, et al. County-level estimates of need for mental health professionals in the United States. *Psychiatr Serv.* 2009;60:1307-1314. - See more at: <http://www.psychiatristimes.com/articles/45000-more-psychiatrists-anyone-0#sthash.6w6Od5m9.dpuf>.

Tax-payer	Will be paying for expenditures resulting from enhanced mental health treatment, will benefit in the long-run as costs are recouped through productivity gains ³¹
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2.1(2) Expenditure Breakdown: Domestic vs International

Canada

Canada spends seven per cent of its public healthcare dollars on mental health, compared to the eight per cent spent in Australia³² and the 11 per cent spent in the U.K.³³ This seven percent of total healthcare budget amounts to \$15.3 billion in 2015.³⁴ Of this \$15.3 billion, 57.4 per cent is spent on mental health delivered in hospitals, 23.4 per cent is spent on prescription medication, and 19.1 per cent is spent on physicians providing psychological care to patients.³⁵ 47 per cent to 72 per cent of Canadians said they had some form of government or private insurance coverage for the mental health services they accessed.³⁶ CIHI reports that “little data exists about the extent of private insurance coverage” in the case of mental health expenditures in Canada.³⁷ No province in Canada offers publicly-financed psychotherapy to mentally ill patients (Appendix A). Patients are left to pay out-of-pocket, or through private insurance, for psychotherapy.

³¹ I. Zechmeister, R. Kilian, & D. McDaid, “Is it worth investing in mental health promotion and prevention of mental illness? A systematic review of the evidence from economic evaluations,” *BMC Public Health*, 8(20), (2008), http://ktdrr.org/cgi-bin/lib_systematic_search.cgi?location=sr&sel_1=82.

³² How much do we spend on health?, Australian Government, 2012, <http://www.aihw.gov.au/australias-health/2012/spending-on-health/>.

³³ Jacobs, Dewa, Lesage, Vasiliadis, Escobar, Mulvale, Yim, The Cost of Mental health and substance abuse services in Canada, *Institute of Health Economics*, Edmonton, Alberta, 2010, <http://www.ihe.ca/documents/Cost%20of%20Mental%20Health%20Services%20in%20Canada%20Report%20June%202010.pdf>.

³⁴ Spending, Canadian Institute for Health Information, 2016, <https://www.cihi.ca/en/spending-and-health-workforce/spending>; \$219.1 billion * 7% = \$15.3 billion

³⁵ Exploring the 70/30 Split: How Canada’s Health Care System is Financed, CIHI, 2005, page 110, https://secure.cihi.ca/free_products/FundRep_EN.pdf; \$2.7 billion / \$4.7 billion = 57.4%, \$1.1 billion / \$4.7 billion = 23.4%, \$0.9 billion / \$4.7 billion = 19.1%

³⁶ Ibid.

³⁷ Ibid.

United Kingdom

Other Commonwealth nations lead in coverage of psychotherapy, particularly the United Kingdom and Australia. Canada is the only G7 nation without a national mental health strategy.³⁸ In 2010, the U.K. Government implemented the Improving Access to Psychological Therapies (IAPT) program in certain jurisdictions. Since 2010, the IAPT has been implemented throughout the entire U.K., a specialized division of IAPT focusing on youth has been created, and a specialized division for those with severe mental illness has been implemented.³⁹

More recently, the U.K. government pledged \$1.8 billion over years 2016-2021 in support of mental health care.⁴⁰ The money will be spent on increasing access to talk therapies, reducing suicide rates, improving access to psychological care in local communities, increasing mental health access to children and youth, and ensuring every acute-care hospital in the U.K. has special mental health departments for those finding themselves in the emergency department due to a mental illness. It was found in the U.K. that most patients attended six sessions of the publicly-financed psychotherapy, although more were available.

Australia

Australia has a two-tiered publicly-financed system of psychotherapy, and is offered through the Access to Allied Psychological Services (ATAPS) program. The first six sessions are publicly-financed, while the remaining six or potentially twelve, are publicly-financed for certain groups of peoples. Patients use an average of five sessions, all of which are publicly-financed. The program has been met with much support from Australians. It has had so much support, that Professor

³⁸ Ken Macqueen, Julia Belluz, "Mental health care for the few," *Maclean's*, March 22, 2011, <http://www.macleans.ca/society/health/mental-health-care-for-the-few/>.

³⁹ About Us, IAPT, <http://www.iapt.nhs.uk/about-iapt/>.

⁴⁰ An extra 1 billion pounds will be invested in mental health care by 2021 and a million more people will get mental health support, New investment in mental health services, U.K. Government, February 15, 2016, <https://www.gov.uk/government/news/new-investment-in-mental-health-services>.

Anthony Jorm at Melbourne School of Population and Global Health, stated “It would be difficult for the government to undo [it] at this point.”⁴¹

2.1(3) Psychotherapy Coverage

In Canada, where healthcare falls to provincial governments, psychotherapy is not covered under any of the ten provinces.⁴² Canadians struggling with mental health issues have two treatment options: access community supports that operate on reduced fees, or pay out-of-pocket for private psychotherapy. Canadian private psychotherapy typically costs around \$125 to \$175 per session, but does run over \$200 per session.⁴³ The amount charged for community programs is usually determined based on a sliding-fee schedule, meaning wealthier patients will pay proportionately more than poorer patients.

Community programs are usually short-term in their coverage of counselling sessions, most often with a fixed amount of sessions available for the patient. The mental health practitioners in these programs are primarily counsellors rather than psychologists: counsellors typically have a master’s degree while psychologists possess doctoral degrees.⁴⁴ Research is mixed on the relationship between experience and psychotherapeutic success. Researchers Stein and Lambert discovered doctoral psychologists are more effective at treating patients than master’s level therapists.⁴⁵ However, research also shows that less experienced psychologists are actually more effective than

⁴¹ Erin Anderssen, “The case for publicly funded therapy,” *The Globe and Mail*, May 22, 2015, <http://www.theglobeandmail.com/life/the-case-for-publicly-funded-therapy/article24567332/>.

⁴² All Canadian provincial healthcare programs were investigated to validate that psychotherapy is non-insured (Appendix A)

⁴³ Psychotherapy Fees, Therapy Toronto, <http://therapytoronto.ca/fees.phtml>.

⁴⁴ Ann Steele, “Clinical vs Counseling: 5 Core Differences,” *Masters in Psychology Guide*, last modified 2015, <http://mastersinpsychologyguide.com/articles/5-core-differences-between-clinical-psychology-and-counseling-psychology>.

⁴⁵ David M. Stein & Michael J. Lambert, “Graduate training in psychotherapy: Are therapy outcomes enhanced?,” *Journal of Consulting and Clinical Psychology*, Vol 63(2) (1995), http://www.researchgate.net/profile/Lambert_Michael/publication/222958822_On_the_relationship_between_therapist_experience_and_psychotherapy_outcome/links/02e7e536158fba1dbc000000.pdf.

their more experienced counterparts.⁴⁶ Community services have long wait times, although this is a problem in the private sector as well. Lastly, for patients living with a severe mental illness that requires specialized treatment, patients may need to venture into the private sector simply to find a therapist familiar with their required type of treatment. For example, typical OCD therapy involves specialized exposure response prevention (ERP) therapy. While counsellors at community facilities may work with ERP, an OCD patient may need to expand their search in order to find the correct therapist.⁴⁷

While psychotherapy is not covered under healthcare in Canada, psychiatry is fully publicly-financed. Psychiatrists are medical doctors (MDs) and can prescribe medication to mentally ill patients. These mental health practitioners are medical doctors and therefore are covered under the 1984 Canada Health Act. Psychologists treat mentally ill patients but are not MDs and are not provincially covered. Psychologists treat patients using CBT and other methods of treatment, but cannot prescribe medication.

2.1(4) Status Quo Approach

Continuing with the status quo is an option for policy makers. Doing so has the advantage of not having to reallocate millions of dollars to fund a psychological care model. The second advantage is that if nothing is changed, nothing more can fail. There is the risk of investing millions of dollars into a new psychological care model – only to have it fail. The disadvantages of continuing with the status quo are that it is costly: \$2.3 billion annually in excess costs to the provincial healthcare system, as well as 531 annual suicides in Alberta. These suicides are also costly, as each suicide is

⁴⁶ Goldberg, Rousmaniere, Miller, Whipple, Nielson, Hoyt, Wampold, “Do psychotherapists improve with time and experience? A Longitudinal analysis of outcomes in a clinical setting,” *Journal of Counseling Psychology*, 63(1), January 2016, <http://www.ncbi.nlm.nih.gov/pubmed/26751152>.

⁴⁷ What You Need to Know About Obsessive Compulsive Disorder, International OCD Foundation, http://www.ocfoundation.org/uploadedfiles/whatyouneed_09.pdf

estimated to cost the province \$849,878,⁴⁸ representing a total of \$451,285,218, mostly in lost lifetime earnings. Furthermore, “suicide costs are on the order of 0.5 percent of Alberta’s GDP.”⁴⁹

2.2 Current Context

2.2(1) Reasons for Change

Three points can be made regarding reasons for changing the way in which mental illness is treated in Canada: untreated mental illness is expensive for today’s governments and taxpayers, international case studies show that treating mental illness in preventative manners leads to favorable returns on investment, and that any such treatment will be expensive and will require commitment from appropriate governments.

Smetanin et al. finds that the 2011 economic impact of mental illness in Canada was \$48.6 billion.⁵⁰ \$42.3 billion of this total cost was from direct costs to the economy. Of this \$42.3 billion, \$21.3 billion (43.8 per cent of total economic impact) was in direct costs to the healthcare system, including hospitalizations, physician visits, medication, and care and support staff. The \$6.3 billion was from indirect costs, specifically lost productivity in the labour force. As stated above, untreated mental illness costs Alberta’s healthcare system an annual \$2.3 billion.⁵¹

Researchers Myhr and Payne analyzed the costs and economic benefits resulting from administering CBT on mood, anxiety, psychotic, and somatoform disorders.⁵² The purpose of their

⁴⁸ Clayton, Barcel, “The Cost of Suicide Mortality in New Brunswick, 1996,” *Chronic Diseases in Canada*, 20(2): 89-95, 1999.

⁴⁹ Anielski, “The Alberta GPI Accounts: Suicide,” *Pembina Institute*, November 2001, http://www.pembina.org/reports/10_suicide.pdf.

⁵⁰ Smetanin et al, “The Life and Economic Impact of Major Mental Illness in Canada: 2011 to 2041,” *Risk Analytica*, 2011.

⁵¹ $3,645,257/34,340,000 = 10.6\%$; $\$48.6 \text{ B [Smetanin et al]} * 10.6\% = \5.16 B ; $\$5.2 \text{ billion} * 43.8\% = \2.3 billion (43.8% taken from Smetanin et al. 2011 study)

⁵² Myhr & Payne, “Cost-effectiveness of cognitive-behavioural therapy for mental disorders: implications for public health care funding in Canada,” *Canadian Journal of Psychiatry*, 2006.

work was to establish if funding CBT is cost-effective. Their systematic review discovers that based on international cases, particularly from the United Kingdom, United States, and Australia, investing in CBT is in fact cost-effective. However, due to a lack of cost-effective analyses in Canada, the researchers could not definitively report whether investing in CBT in Canada would be economically sound. The overall conclusion drawn was that since international cases demonstrate investing in CBT is cost-effective, then it is likely to be cost-effective in Canada as well. They describe how more investigative work needs to be done in the Canadian context.

Researcher Lazar SG offers a caveat. Lazar finds that while cost-effective treatments yield savings in healthcare costs, disability claims, and other societal costs, it must be noted that cost-effective treatments are not 'cheap'.⁵³ Lazar also states for many people, short-term treatment is not enough and longer-term psychotherapy is required. The study reports that in today's mental health treatment landscape, many people with serious mental illness, if covered by insurance, fall through the cracks and receive substandard psychological treatment. From Lazar's findings, the conclusion can be drawn that investing in psychotherapy is cost-effective, as long as the government that will be providing such services is willing and able to properly fund the initiative.

2.2(2) How can a Mental Illness Treatment Program be Funded?

Psychological therapy could be funded through full public-financing from the government, a system of co-payments where the patient covers some of the cost, the implementation of user fees, or payment collected based on usage and calculated through the income tax system. Internationally, the U.K. and Australia both offer publicly-financed therapy. If integrating psychological care into PCNs, then full public-financing will need to be implemented, since services offered in PCNs are

⁵³ Lazar SG, "The cost-effectiveness of psychotherapy for the major psychiatric diagnoses," *Psychodynamic Psychiatry*, 2014.

publicly covered. One of the main deterrents for people needing to access psychological therapy is that it is too expensive, and the question this Capstone aims to answer is whether or not the avoided costs from offering publicly-covered psychotherapy outweigh the costs of implementing such a program. User fees and co-payment systems will deter more people from accessing psychological services, and in this Capstone’s Section 4, it is found that the more people that access psychotherapy, the greater the cost-savings.

2.2(3) Stakeholder Analysis

For some stakeholders, implementation of such a plan as outlined in Section 4 would be an incredible opportunity for recovery. For others, it would mean lost wages and greater competition. The following table outlines how each affected stakeholder will react, and if they would be for or against any implemented program:

Table 2: Stakeholder Reactions

Stakeholder:	For/Against	Details
Those living with a mental illness	For	Will have access to the proper treatment they require
Those living with a mental illness (low-income and at-risk)	For	Will have access to proper treatment (integrating psychological care into PCN facilities will allow more low-income people to access services)
Those who know someone with a mental illness	For	Would see loved ones receive treatment they require, less emotional and financial stress due to loved ones leading more stable lifestyle
Medical doctors (namely family physicians)	For	Will have necessary tools to treat patients with mental illness, will have greater access to MHPs
Psychologists	For and against	The province will see a large demand for new psychologists, leading to more jobs. However, existing psychologists operating in private clinics will see demand for their services fall.
Psychiatrists	For	Existing psychiatrists will still have demand for their services, as there is currently a shortage of

		psychiatrists in Alberta . ⁵⁴ There will be a greater demand for new psychiatrists in Alberta.
Behavioural health consultants	For and against	May see roles change from one of mental health treatment to acting as a gatekeeper to any model implemented (psychologists will now treat patients for mental health issues). Some BHCs may welcome the change, others may resist.
Politicians	For and against	Some will see the investment in mental health treatment as a political strength and an opportunity to achieve something great for Alberta. Others will see it is an unpalatable sell for the people of Alberta, due to its multi-million dollar price tag.
Employers	For	will experience productivity increases as employees have access to proper care
Taxpayer	(mainly) against	Will ultimately be paying for any investment in mental health. Some taxpayers will realize the long-term cost-savings, while most will only see the short-term multi-million dollar price tag.

2.2(4) Policy Options - Psychotherapy: cognitive behavioural therapy vs psychodynamic psychotherapy

Multiple studies demonstrate how CBT is effective at treating mental illness. Psychodynamic psychotherapy, although less documented in the literature than CBT, also offers effective treatment for mentally ill patients. When the two treatment methods are compared, they are very similar in remission and response rates. However, it is concluded that CBT does offer better treatment of mental illness than psychodynamic psychotherapy.

Hunsley, Elliot, and Therrien find “there is extensive evidence demonstrating that psychotherapy can be an efficacious and effective healthcare service for a wide range of commonly experienced mental health and health conditions.”⁵⁵ Additionally, psychotherapy works just as well, if not better, for patients with serious and debilitating mental illness (SMI) as it does for patients with mild

⁵⁴ Konrad TR, Ellis AR, Thomas KC, et al. County-level estimates of need for mental health professionals in the United States. *Psychiatr Serv.* 2009;60:1307-1314. - See more at: <http://www.psychiatrytimes.com/articles/45000-more-psychiatrists-anyone-0#sthash.6w6Od5m9.dpuf>.

⁵⁵ Hunsley, Elliott, Therrien, “The Efficacy and Effectiveness of Psychological Treatments” *The Canadian Psychology Association*, 2013, http://www.cpa.ca/docs/File/Practice/TheEfficacyAndEffectivenessOfPsychologicalTreatments_web.pdf.

mental illnesses. Lastly, psychotherapy used in conjunction with prescribed medication is more effective than either type of treatment used alone.⁵⁶

Payne and Myhr describe CBT as “a problem-focused, empirically based psychotherapy that teaches patients to detect and modify thought patterns and change behaviour to reduce distress and promote well-being.”⁵⁷ CBT typically runs for 12 sessions, during the course of two to three months.⁵⁸

Multiple studies demonstrate how CBT offers benefits over relying solely on medication to treat mental illness:

1. compared to medication, CBT is associated with higher patient satisfaction⁵⁹
2. CBT results in fewer side effects and less relapses than using only prescribed medication⁶⁰
3. less patients drop out of therapy if engaged in CBT, rather than relying solely on drugs⁶¹

Dobson KS concludes that CBT is more effective for treating patients with depression than nothing at all, behavioural therapy, other forms of therapy, or pharmacotherapy.⁶² The report warns,

⁵⁶ Hunsley, Elliott, Therrien, “The Efficacy and Effectiveness of Psychological Treatments” *The Canadian Psychology Association*, 2013, http://www.cpa.ca/docs/File/Practice/TheEfficacyAndEffectivenessOfPsychologicalTreatments_web.pdf.

⁵⁷ K. A. Payne & G. Myrh, “Increasing Access to Cognitive-Behavioural Therapy (CBT) for the Treatment of Mental Illness in Canada: A Research Framework and Call for Action,” *Healthcare Policy*, 5(3) (2010), <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2831741/>.

⁵⁸ Adam Brimelow, “Demand for NHS ‘therapy network’,” *BBC News*, November 22, 2005, <http://news.bbc.co.uk/2/hi/health/4174082.stm>.

⁵⁹ Turkington, Kingdon, Turner, “Effectiveness of a Brief Cognitive-Behavioural Therapy Intervention in the Treatment of Schizophrenia,” *British Journal of Psychiatry*, 180: 523-527, 2002.

⁶⁰ Otto, Pollack, Maki, “Empirically Supported Treatments for Panic Disorder: Costs, Benefits, and Stepped Care,” *Journal of Consulting & Clinical Psychology*, 68(4): 556-563, 2000; Hollen et al, “Prevention of Relapse Following Cognitive Therapy vs. Medications in Moderate to Severe Depression,” *Archives of General Psychiatry*, 62(4): 417-422, 2005.

⁶¹ Gould, Otto, Pollack, “A Meta-Analysis of Treatment Outcome for Panic Disorder,” *Clinical Psychology Review*, 15(8): 819-844, 1995.

⁶² Dobson KS, “A meta-analysis of the efficacy of cognitive therapy for depression,” *Journal of Consulting and Clinical Psychology*, 1989.

however, that CBT is not a panacea for depression. For many patients, it must be augmented with the use of medication. In conclusion, the researcher finds CBT is the best form of therapy for people who are suffering from depression.

Multiple meta-analyses have shown that CBT is effective at treating anxiety. Norton and Price's study goes further by examining CBT effectiveness across a range of anxiety disorders.⁶³ CBT and exposure therapy "were efficacious across the anxiety disorders."⁶⁴ The study included all anxiety disorders, except for specific phobias. These anxiety disorders included: panic disorder, social anxiety disorder, obsessive-compulsive disorder (OCD), posttraumatic stress disorder (PTSD), and generalized anxiety disorder.

However, one of the issues of why CBT is not currently publicly-funded in Canada is because there are a substantial number of psychologists who discredit claims that CBT is the most effective method of treatment. Some psychologists also state that CBT is not as effective as it is often claimed to be. One such psychologist, Oliver James, says that CBT is only a short-term solution, and offers no long-term benefits.⁶⁵ He further states that CBT has been mis-sold to politicians, policy makers, and the public, and is not in fact a very effective method of treatment. Mr. James claims that psychodynamic psychotherapy is the better option for mentally ill patients to pursue. Psychologists in the U.K. have criticized their government's investment in CBT, with some saying that the investment in CBT was done for employment purposes and political reasons.

⁶³ Norton, Price, "A Meta-Analytic Review of Adult Cognitive-Behavioral Treatment Outcome Across the Anxiety Disorders" *The Journal of Nervous and Mental Disease*, 2007, <http://ebbp.org/resources/NortonPrice.pdf>.

⁶⁴ Ibid.

⁶⁵ Jenny Hope, "'CBT is a scam and a waste of money': Popular talking therapy is not a long-term solution, says leading psychologist," *Daily Mail*, November 2014, <http://www.dailymail.co.uk/health/article-2828509/CBT-scam-waste-money-Popular-talking-therapy-not-long-term-solution-says-leading-psychologist.html>.

Dr. Shedler finds that psychodynamic therapy is effective and does lead to long-term recovery of the patient.⁶⁶ Other literature shows that therapy such as CBT may be effective because it draws on aspects of psychodynamic therapy: “The more the therapists acted like psychodynamic therapists, the better the outcomes.”⁶⁷ One limitation of the effectiveness of psychodynamic therapy is that there exists relatively little literature on its efficacy, when compared to other more popular therapies such as CBT.

When CBT is compared with psychodynamic psychotherapy, the literature gives an advantage to CBT. Leichsenring et al. found that CBT and psychodynamic therapy lead to identical remission rates and no difference was found in long-term follow-up.⁶⁸ Furthermore, the same study found CBT to be more efficacious than psychodynamic therapy in the short-term. Driessen et al. found that patients undergoing CBT experienced 24.3 per cent remission, while patients undergoing psychodynamic therapy experienced 21.3 per cent remission.⁶⁹ In 2015, Leichsenring et al. found that psychodynamic psychotherapy is effective, yet not substantially different than the efficacy of other methods of treatment.⁷⁰ Leichsenring et al. 2013 investigated remission rates for social anxiety disorder from CBT and psychodynamic therapy treatment. Response and remission rates for CBT were 60 per cent and 36 per cent, respectively.⁷¹ Response and remission rates for

⁶⁶ Jonathan Shedler, “The Efficacy of Psychodynamic Psychotherapy,” *American Psychologist*, 65(2): 98-109, March 2010, doi: 10.1037/a0018378.

⁶⁷ Psychodynamic Psychotherapy Brings Lasting Benefits through Self-Knowledge, American Psychological Association, January 25, 2010, <http://www.apa.org/news/press/releases/2010/01/psychodynamic-therapy.aspx>.

⁶⁸ Leichsenring, et al., “Long-term outcome of psychodynamic therapy and cognitive-behavioral therapy in social anxiety disorder,” *The American Journal of Psychiatry*, 171(10): 1074-1082, Oct 2014, doi: 10.1176/appi.ajp.2014.13111514.

⁶⁹ Driessen et al., “The Efficacy of Cognitive-Behavioral Therapy and Psychodynamic Therapy in the Outpatient Treatment of Major Depression: A Randomized Clinical Trial,” *The American Journal of Psychiatry*, 170(9): 1041-1050, 2013, <http://dx.doi.org/10.1176/appi.ajp.2013.12070899>.

⁷⁰ Leichsenring et al., “Psychodynamic therapy meets evidence-based medicine: a systematic review using updated criteria,” *Lancet Psychiatry*, 2(7): 648-660, July 2015, doi: 10.1016/S2215-0366(15)00155-8.

⁷¹ Leichsenring et al., “Psychodynamic Therapy and Cognitive-Behavioural Therapy in Social Anxiety Disorder: A Multicenter Randomized Controlled Trial,” *The American Journal of Psychiatry*, 170(7): 759-767, 2013, <http://dx.doi.org/10.1176/appi.ajp.2013.12081125>.

psychodynamic therapy were 52 per cent and 26 per cent, respectively.⁷² Three studies throughout the 1990s reported identical response and remission rates for CBT and psychodynamic therapy.⁷³ Leichsenring and Leibing found that psychodynamic therapy for borderline personality disorder resulted in recovery rates of 59 per cent, which are relatively high compared to other methods of treatment.⁷⁴ Watzke et al. found “patients randomized to CBT had a significantly better longer term outcome...6 months after treatment than patients randomized to PDT [psychodynamic therapy].”⁷⁵

Table 3 summarizes the above studies:

Table 3: CBT and Psychodynamic Therapy Compared

Factor	CBT	Psychodynamic	Advantage
Leichsenring et al 2014	Identical remission rates, identical long-term follow-up, more efficacious in short-term	Identical remission rates, identical long-term follow-up, less efficacious in short-term	CBT
Driessen et al 2013	24.3 per cent remission	21.3 per cent remission	CBT
Leichsenring et al 2015	Similar remission rates		-
Leichsenring & Leibing	Less efficacious for borderline personality disorder	More efficacious for borderline personality disorder	Psychodynamic
Leichsenring et al 2013	Response: 60%, remission: 36%	Response: 52%, remission: 26%	CBT
Barkham et al 1999	Identical remission and response		-
Shapiro et al 1994	Identical remission and response		-

⁷² Leichsenring et al, “Psychodynamic Therapy and Cognitive-Behavioural Therapy in Social Anxiety Disorder: A Multicenter Randomized Controlled Trial,” *The American Journal of Psychiatry*, 170(7): 759-767, 2013, <http://dx.doi.org/10.1176/appi.ajp.2013.12081125>.

⁷³ Barkham et al, “Psychotherapy in two-plus-one sessions: Outcomes of a randomized controlled trial of cognitive-behavioral and psychodynamic-interpersonal therapy for subsyndromal depression,” *Journal of Consulting and Clinical Psychology*, 67(2): 201-211, 1999, <http://dx.doi.org/10.1037/0022-006X.67.2.201>; Shapiro et al, “Effects of treatment duration and severity of depression on the effectiveness of cognitive-behavioral and psychodynamic-interpersonal psychotherapy,” *Journal of Consulting and Clinical Psychology*, 62(3): 522-534, 1994; Shapiro et al, “Effects of treatment duration and severity of depression on the maintenance of gains after cognitive-behavioral and psychodynamic-interpersonal psychotherapy,” *Journal of Consulting and Clinical Psychology*, 63(3): 378-387, 1995.

⁷⁴ Leichsenring, Leibing, “The effectiveness of psychodynamic therapy and cognitive behavior therapy in the treatment of personality disorders: a meta-analysis,” *The American Journal of Psychiatry*, 160(7): 1223-1232, July 2003,

⁷⁵ Watzke et al, “Longer term outcome of cognitive-behavioural and psychodynamic psychotherapy in routine mental health care: randomised controlled trial,” *Behaviour Research and Therapy*, 50(9): 580-587, 2012, doi: 10.1016/j.brat.2012.04.005.

Shapiro et al 1995	Identical remission and response		-
Watzke et al 2012	Superior long term outcome	Inferior long term outcome	CBT
Length & cost	12 sessions	21 – 150 sessions	CBT

After the Capstone researcher’s own literature review, it has been found that CBT is the superior method of treatment to pursue, were a provincial mental health strategy be created and implemented. First, more literature exists on the efficacy of CBT than on psychodynamic psychotherapy. Second, studies that compare CBT with psychodynamic psychotherapy give an advantage to CBT in terms of levels of response rates and patient recovery, both in the short and long term. It must be noted that a substantial number of studies show that CBT and psychodynamic psychotherapy result in identical response and remission rates.

What is iCBT?

Internet-delivered CBT (iCBT) is a cheaper method of delivering the treatment, as opposed to face-to-face CBT. This section investigates what iCBT is, the opportunities and challenges of such treatment, who can benefit from iCBT, who should not use iCBT, and what can be done to better ensure this type of program is successful.

Dr. Gratzler and Ms. Khalid-Khan conduct a literature review of the efficacy, advantages, disadvantages, and cost-effectiveness of iCBT. iCBT is not online communications with a psychologist. Rather it is the delivery of pre-made modules, typically 8 – 12 modules,⁷⁶ for the patient to access electronically.

First, the researchers find that iCBT for anxiety requires fewer resources and is found to be just as effective as face-to-face CBT. For those with depression, it was found that iCBT is “equivalent to or

⁷⁶ Online therapy user update. Regina: University of Regina; 2013.

marginally better than treatment as usual.”⁷⁷ In terms of long-term treatment, it was found that ‘booster’ sessions, which are additional sessions to refresh principles learned, may be an effective long-term solution. Also, the researchers found that a study by Kiropoulos, Klein, and Austin demonstrated when patients are provided with online modules, they experience just as effective treatment as those who undergo face-to-face CBT with a psychologist.⁷⁸ The only advantage to the face-to-face sessions was that patients enjoyed the sessions more than those completing modules by themselves online. Additionally, online modules are much cheaper than face-to-face psychotherapy. Prices range from \$0 to \$425.⁷⁹ The Australian Government’s ‘THIS WAY UP’ online program, excluding clinical supervision, costs \$60 per package, and is available worldwide.⁸⁰

Opportunities

The two advantages of online CBT are patient empowerment and increased clinical efficiency.

Patient empowerment takes the form of patients being able to access the online modules anytime and anywhere they want, provided they have internet access. 20 per cent of people with a mental illness reported they did not seek treatment for their mental illness because they were not willing to find the time to engage in treatment.⁸¹ Patient empowerment is one opportunity that iCBT could be promoted as having: allowing patients to have an easier time fitting the sessions in their schedules. Clinical efficiency includes allowing medical doctors and psychologists to deliver CBT to many more patients than they could if they were providing face-to-face CBT. It was also found that homework and activity logs allowed MDs and psychologists to keep informed as to their patients’ progress on the modules. This is the largest opportunity for iCBT, and an area that can be

⁷⁷ Gratzter, Khalid-Khan, “Internet-delivered cognitive behavioural therapy in the treatment of psychiatric illness,” *Canadian Medical Association Journal*, March 1, 2016, DOI: 10.1503/cmaj.150007.

⁷⁸ Kiropoulos, Klein, Austin, et al, “Is Internet-based CBT for panic disorder and agoraphobia as effective as face-to-face CBT?” *Journal of Anxiety Disorders*, 22: 1273-1284, 2008.

⁷⁹ Online Therapy USER: free; PTSD Coach Canada: free; MoodGYM: free; Moodkit: \$7; THIS WAY UP: \$60; Beating the Blues: \$148; OCFighter: \$425

⁸⁰ Control Your Anxiety and Depression, THIS WAY UP, <https://thiswayup.org.au/>.

⁸¹ Exploring the 70/30 Split: How Canada’s Health Care System is Financed, CIHI, 2005, https://secure.cihi.ca/free_products/FundRep_EN.pdf.

capitalized upon. By utilizing the clinical efficiency aspect of iCBT, more patients can be treated with less personnel. Furthermore, less-expensive social workers can be used to monitor mentally ill patients, as compared to more-expensive psychologists.

Challenges

Several challenges were also found. The first challenge is the lack of a human relationship in the internet-delivered CBT. Without a psychologist or MD to encourage use of the modules, the problem of patients dropping out of the program arises. Gratzer and Khalid-Khan found that correspondence with a healthcare practitioner increased the likelihood of patients completing the online modules. The Capstone's researcher has overcome this challenge by proposing that social workers be employed to keep in contact with iCBT patients. The second challenge is that the modules do not adjust for the patients' progress. If the patient is not understanding a key part of some module, there exists no way for the module's intended learnings to be explained in a different way. Alternatively, some modules may become redundant for the patient, who in turn may get discouraged from the program. These challenges can also be overcome through employing social workers to correspond with and answer patient questions. The third challenge is that the patient must have access to the internet in order to complete the modules. While it can be said there are public libraries for everyone to use, it is not clear if patients would be comfortable completing online psychotherapeutic modules in public, rather than in the privacy of their own home. This may be overcome by offering work stations in PCN facilities. The final challenge is that of improper treatment. A large part of the online modules includes diagnostic tools the patient completes. This could lead to improper assessments of what type of mental illness the patient is experiencing. If the patient suspects a diagnosis may be wrong, or if they are not showing any signs of remission, then the social worker assigned to that patient may need to intervene.

Who should not use iCBT?

It is very important to note that patients with a severe and debilitating mental illness should not pursue CBT through online-delivery. Severely mentally ill patients must undergo CBT in a face-to-face setting with a psychologist.

The importance of support-clinicians

While iCBT can be effective, shortcuts cannot be taken. Based on the literature, it is not simply enough to provide iCBT software to patients. For successful results, support clinicians must monitor and correspond with patients completing the program. This will add costs in addition to the iCBT software. The following two studies demonstrate the amount of follow-up time each social worker would need to spend per patient, in order for the patient to maximize their benefit from the iCBT treatment.

Perini, Titov, and Andrews find that internet-based programmes for depression and other mental disorders, when combined with clinical guidance, can result in clinically significant patient improvements.⁸² The study discovers that participants found the eight week internet-based psychotherapy both acceptable and satisfactory. During the eight week program, each participant received eight email contacts from a therapist. This translates into 111 minutes of therapist-patient contact per participant. It should be noted that even with clinician support, only 74 per cent of patients completed the eight week program. This study is consistent with findings from other existing literature.

Stott, Wild, and Grey treated 11 social-anxiety patients with internet-delivered CBT.⁸³ The internet-delivered CBT was supplemented with psychologist support, more heavily than in the Perini Titov

⁸² Perini, Titov, Andrews, "Clinician-assisted Internet-based treatment is effective for depression: Randomized controlled trial," *Australian and New Zealand Journal of Psychiatry*, 43(6): 571-578, 2009, DOI: 10.1080/00048670902873722.

⁸³ Stott, Wild, Grey, et al. "Internet-Delivered Cognitive Therapy for Social Anxiety Disorder: A Development Pilot Series," *Behavioural and Cognitive Psychotherapy*, 41(4): 383-397, 2013, doi: 10.1017/S1352465813000404.

Andrews 2009 study. Stott, Wild, and Grey supplemented their 14 week internet-delivered CBT with 232 minutes of psychologist support. This was broken down into 31 email messages, 7 phone calls, and 12 mobile text messages. 82 per cent of patients were classified as treatment responders, and 64 per cent achieved remission status.

2.2(5) Barriers to Action

There are several barriers to action in the Canadian context. The first barrier to action is the lack of economic analysis of publicly-funding CBT. This is explained further through the analysis of Payne and Myhr's research. Further barriers include inflexible budgets, the inability to free-up resources, healthcare system fragmentation, and that it may be very costly to meet the potentially larger-than-expected demand of people requiring psychotherapy.

Lack of Canadian Economic Analysis

Payne and Myhr conducted an analysis of journal publications and contemporary research regarding publicly-funded CBT.⁸⁴ The review finds that many international cost-effectiveness studies have found investing in CBT to be economically sound, although no Canadian analyses have yet been completed.

While Payne and Myhr have found that in other countries, investing in psychological care does result in favorable returns on investment, it cannot be definitively concluded that the same would hold true for Canada or more specifically, Alberta. This Capstone works to analyze the costs and cost-savings that would accrue to Alberta, if the province decided to publicly-finance mental health care. Section 4 offers detailed costs and cost-savings calculations.

⁸⁴ K. A. Payne & G. Myrh, "Increasing Access to Cognitive-Behavioural Therapy (CBT) for the Treatment of Mental Illness in Canada: A Research Framework and Call for Action," *Healthcare Policy*, 5(3) (2010), <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2831741/>.

Poor Financial Situation

Inflexible budgets and the inability to free up resources is especially timely given Alberta's 2016 financial situation. Alberta's May 2016 unemployment rate was 7.8 per cent,⁸⁵ compared to Canada's 6.9 per cent unemployment.⁸⁶ Alberta's 2015 fiscal year ended with a 4.0 per cent reduction in real GDP.⁸⁷ Canada's 2015 fiscal year ended with a 1.1 per cent growth in real GDP.⁸⁸ Canada's 2015 CPI increased by 1.1 per cent from 2014,⁸⁹ as did Alberta's.⁹⁰ 18.3 percent of Alberta's economy is produced through the oil and gas and mining industries. From June 2015 to June 2016, 43.7 per cent less oil rigs were drilling.⁹¹ Alberta's economy is currently struggling due to low oil prices. The multi-million dollar costs of implementing a psychological care model outlined in Section 4 will be difficult to pay for, given Alberta's current financial situation.

Healthcare System Fragmentation

Healthcare system fragmentation can be overcome through extensive consultation with healthcare professionals. Section 2.2(6) explains how important medical doctors are in the potential implementation of any publicly-financed psychological care model. Section 6 explains the potential reactions of healthcare personnel, as well as information on the need for consultation.

Meeting the Demand

Costs of meeting the demand for psychological care have been estimated in Section 4, based off demand found in Canadian cases as well as demand realized in the U.K.'s IAPT program.

⁸⁵ Economic Trends, Treasury Board and Finance – Government of Alberta, <http://finance.alberta.ca/aboutalberta/economic-trends/current-economic-trends.pdf>.

⁸⁶ Labour force characteristics, seasonally adjusted, by province, Statistics Canada – Government of Canada, July 8, 2016, <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/lfss01a-eng.htm>.

⁸⁷ Alberta Economy, Treasury Board and Finance – Government of Alberta, <http://www.finance.alberta.ca/aboutalberta/at-a-glance/current-economy-indicators-at-a-glance.pdf>.

⁸⁸ $((\$1,766,554,000 (2015) - \$1,747,709,000 (2014))/\$1,747,709,000)*100 = +1.08\%$; Real gross domestic product, expenditure-based, Statistics Canada – Government of Canada, May 31, 2016, <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ05-eng.htm>.

⁸⁹ Consumer Price Index, by province, Statistics Canada – Government of Canada, January 22, 2016, <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ09a-eng.htm>.

⁹⁰ Ibid.

⁹¹ Economic Trends, Treasury Board and Finance – Government of Alberta, <http://finance.alberta.ca/aboutalberta/economic-trends/current-economic-trends.pdf>.

Will People Use the Services?

There are certain socio-economic reasons for change. Low-income people face greater barriers in regards to benefiting from psychotherapy, when compared to the rest of society.⁹² In an article published in the *American Psychologist* journal, it is found that low-income people face issues of classism when attempting to utilize psychological services, and that part of the issue rests with the psychologists themselves. Psychologists have predominantly focused on treating middle and upper-class patients, and so the entire industry has a lack of knowledge and experience when attempting to treat low-income individuals. In this regard, there is a lack of comprehensiveness in psychological approaches taken for low-income patients, including how to:

1. offer treatment that considers poor peoples' lack of access to financial resources, stable living conditions, adequate housing, and proper nutrition
2. incentivize low-income people to seek out psychological services, when many poor and working-class communities are neither familiar with nor accepting of such treatment
3. deliver psychological care that is physically located in poorer communities, again overcoming the lack of acceptance of talk therapy within such communities

Additionally, low-income people are less likely to seek help from a psychologist, even if their services are offered free of charge.⁹³ Furthermore, when low-income individuals seek the help of psychologists, studies have shown that these individuals are less often accepted into mental health treatment when compared with other types of individuals.⁹⁴ If a low-income patient is actually accepted into psychotherapy, they are more likely to drop-out of therapy than other patients.⁹⁵

⁹² Laura Smith, "Psychotherapy, Classism, and the Poor: Conspicuous by Their Absence," *American Psychologist*, Vol 60(7), Oct 2005, 687-696, <http://dx.doi.org/10.1037/0003-066X.60.7.687>.

⁹³ George W. Albee, "Does including psychotherapy in health insurance represent a subsidy to the rich from the poor?" *American Psychologist*, 1977, 719-721, <http://dx.doi.org/10.1037/0003-066X.32.9.719>.

⁹⁴ Brill & Storrow, "Social class and psychiatric treatment," *Archives of General Psychiatry*, 1960, 3(4), 340-344, doi:10.1001/archpsyc.1960.01710040010002.; Hollingshead & Redlich, "Poverty, Socioeconomic Status, and Mental Illness," *American Journal of Public Health*, 2007, 97(10), 1755, doi:10.2105/AJPH.2007.117606; Rosenthal & Frank, "The fate of psychiatric out-patients referred to psychotherapy," *The Journal of Nervous and Mental Disease*, 1958, 127(4), 330-43.

⁹⁵ Baekeland & Lundwall, "Dropping out of treatment: a critical review," *Psychological Bulletin*, 1975, 82(5), 738-83.

Unfortunately, several studies have shown that psychologists do not like treating low-income patients, and even consider such treatment a waste of time.⁹⁶

These findings illustrate how even if psychological services are provided to Albertans at no cost, citizens will not necessarily use, nor greatly benefit from, these publicly-covered services. This is especially true for low-income Albertans, as low-income Albertans face unique barriers to benefiting and accessing psychological care. CIHI reports that 34 per cent of Canadians will not use psychological services, and would prefer to deal with the problem on their own.⁹⁷ Another 20 per cent reported they did not seek treatment because they “did not get around to getting help.”⁹⁸ It is possible that this 20 per cent may begin to utilize treatment if it were provided at no cost, although many may still not seek out treatment. For calculation purposes, a 46 per cent uptake rate of psychological services has been used to conservatively estimate cost-savings. The following subsection investigates what can be done to accommodate patients and how to avoid disenfranchising those seeking to use the system, if a publicly-financed psychological care model were implemented.

What can be done to Accommodate Patients? Integrating Psychological Care

Integrating psychological care into primary care facilities, as investigated below, is the leading way to offer the most effective type of mental health treatment to patients. Various advantages are evident, including superior follow-up rates and healthier outcomes.

Ontario’s Summerville Family Health Team (SFHT) shared mental health care program was investigated, and the researchers found that family health teams (FHTs) result in positive outcomes with relatively few sessions, occur within a familiar environment and in close communication with

⁹⁶ Lorion, “Socioeconomic status and traditional treatment approaches reconsidered,” *Psychological Bulletin*, 79(4), 263-70.

⁹⁷ Exploring the 70/30 Split: How Canada’s Health Care System is Financed, CIHI, 2005, https://secure.cihi.ca/free_products/FundRep_EN.pdf.

⁹⁸ Ibid.

the FP, have relatively short wait times for the patient, and maximize access to mental health professionals (MHPs) for those seeking treatment. FHTs are a type of shared mental health care program in Ontario: they combine the efforts of FPs, nurse practitioners, social workers, psychiatrists, dieticians, and other healthcare professionals. This multi-disciplinary team works collaboratively to provide successful mental health care treatment.

The researchers of the above study found the SFHT's wait times ranged from 5.80 weeks (41 days) for a social worker to 10.64 weeks for a psychologist (74 days). Although the study calls these wait times "relatively short,"⁹⁹ they are both much higher than the U.K.'s IAPT wait times of 32 days. The average SFHT treatment length for psychological therapy was 7.48 visits per patient. The average for social worker sessions was 3.08 sessions per patient. This is comparable to the U.K.'s average of 6.3 psychotherapy sessions. In regards to patient satisfaction, the study found "Patient satisfaction was high both at the start of treatment and at the end of treatment."¹⁰⁰ "82.4% of patients reported improved levels of functioning and well-being at the end of therapy, indicating that the services provided were effective in helping patients."¹⁰¹ This is comparable to the 86 per cent of Australians who reported improved levels of functioning from the Australian psychological care programs. The SFHT study demonstrates how shared care models have succeeded elsewhere in Canada, and are comparable to international psychological care model results.

Lovell and Richards examine the U.K.'s recent investment in CBT, specifically they examine the way in which CBT is delivered to the patient.¹⁰² This study calls for alternative methods of CBT delivery that emphasize equity, accessibility, and choice. They find that very typically, CBT is delivered in a

⁹⁹ Cordeiro, Foroughe, Mastorakos, "Primary Mental Health Care in the Family Health Team Setting: Tracking Patient Care from Referral to Outcome," *Canadian Journal of Community Mental Health*, Vol. 34, No. 3, 2015.

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

¹⁰² Lovell, Richards, "Mutlip Access Points and Levels of Entry (MAPLE): Ensuring Choice, Accessibility and Equity for CBT Services," *Behavioural and Cognitive Psychotherapy*, 2000.

standard model, including the following components: 9-5 delivery of services, hourly appointments, and face-to-face therapy. The paper speculates that although this is customary, it in fact disenfranchises and deters the majority of the population from seeking services. The paper also reveals multiple areas that should be studied further: how best to avoid the problem of 'no-shows', what the ideal session duration is, and if the number of sessions should be capped in order to encourage the patient to recover more fully on their own. When determining whether or not Albertans will use psychological services if publicly-financed, this study offers insight into how best to accommodate patients and to avoid disenfranchising people seeking to use the system. For example, the Calgary Counselling Centre offers evening and weekend appointments in order to best accommodate patients.¹⁰³ They also offer the choice between male and female counsellors, in order to accommodate any patient preferences.¹⁰⁴ This type of care should be investigated when considering how to implement a type of publicly-financed model, as it will allow greater uptake from the public.

Schreiter et al.'s study begins by finding that under models where patients are referred to external clinics, less than 33 per cent of patients actually follow-up with the referral. Other problems inherent in patients needing to visit private clinics involve lack and cost of transportation, distance from service providers, limited clinic hours, and lack of available appointments or insurance coverage. This causes FPs to take on prescribing responsibility for the patient, rather than with a more qualified psychiatrist. These difficulties can be remedied by integrating psychological care into primary care facilities, as well as offering flexible counselling session availability.

¹⁰³ Calgary Counselling Centre, phone call to reception, July 15, 2016.

¹⁰⁴ Ibid.

A further benefit that was found with integrating psychological and psychiatric care into primary care facilities was that treatment occurs in a space the patient is familiar and comfortable with. This addresses the third issue faced by low-income mentally ill patients. The study finds that an effective method of interdisciplinary care involves electronic or face-to-face communication between the psychologist, psychiatrist, and FP. The conversation is meant to be three-pronged, with the above mentioned parties all collaborating to determine the best type of medication to prescribe. This will occur if MHPs are integrated into existing PCN facilities. Behavioural health consultants (BHCs) also act as the model's gatekeeper, where they conduct an initial assessment with the patient and then refer them on to the proper mental healthcare provider. Alberta's current use of BHCs could be leveraged to use these personnel as potential gatekeepers, as the study suggests.

The study concludes by listing the following benefits attributed to multidisciplinary mental healthcare: decreased healthcare costs, increased identification of mental health issues, increased accessibility to mental health services, improved patient outcomes, increased patient and provider satisfaction, and an opportunity for the psychologist, psychiatrist, and FP to all learn from one another's skill sets. This study demonstrates many reasons for integrating psychological care into primary care facilities, as opposed to separating MHPs from FPs in where they physically work.

Gallo et al. investigated the opinions of clinicians whose patients experienced integrated, rather than referred, care for mental illness. Integrated care constitutes multidisciplinary teams integrated into primary care settings. Referred care is when patients are referred to private clinics external to the primary care setting. It is found that: 93 per cent of FPs believe integrated care led to better communication between primary care clinicians and MHPs, 93 per cent of FPs believed integrated care resulted in less stigma for patients, and 92 per cent of FPs believed integrated care led to better coordination of both mental and physical care. However, clinicians felt that although

communication was enhanced, integrated care did not necessarily lead to better management of: depression (64 per cent), anxiety (76 per cent), or alcohol problems (66 per cent). “At sites in which the clinicians were rated as participating in mental health care, integrated care was highly rated as improving communication between specialists in mental health and primary care.”¹⁰⁵ This study offers further support for integrating psychological care into primary care facilities.

Gallo et al. also found that when depressed older adults were treated in interdisciplinary healthcare settings, they were 24 per cent less likely to die than those treated with fragmented care.¹⁰⁶ The literature above demonstrates how integrated mental health care is superior to fragmented care. Integrated care results in greater follow-up rates, shorter wait times, higher patient satisfaction, and even less mortality.

These are all important findings for the formulation of any proposed psychological care program. Based on the above studies, it becomes evident that the most promising method of delivering a psychological care program is through integrated care. Doing so has many advantages over a referral system, and will lead to higher patient satisfaction and greater patient recovery rates.

2.2(6) Areas of Leverage

Two areas of leverage exist if any attempt is made at publicly-financing psychological care. The first is the financial argument: investigating the potential returns on investment of investing in psychological care, if found favorable, will be a strength of any such program. The second area of

¹⁰⁵ Gallo, Zubritsky, Maxwell, et al – “Primary Care Clinicians Evaluate Integrated and Referral Models of Behavioral Health Care For Older Adults: Results From a Multisite Effectiveness Trial (PRISM-E),” *Annals of Family Medicine*, 2(4): 305-309, 2004, doi: 10.1370/afm.116

¹⁰⁶ Gallo et al, “Long term effect of depression care management on mortality in older adults: follow-up of cluster randomized clinical trial in primary care,” *British Medical Journal*, 346: 2570, 2013, doi: <http://dx.doi.org/10.1136/bmj.f2570>.

leverage lies in building a coalition with family physicians (FPs): family doctors want to effectively treat their mentally ill patients, yet they do not have the proper resources and personnel to do so.

Economics

Richard Layard of the London School of Economics made a convincing case to the U.K. Government about the economic gains that would result from publicly-funding CBT.¹⁰⁷ Layard explained to the U.K. Government that untreated mental illness was costing the United Kingdom billions of pounds per year in lost productivity and disability claims. He suggested the idea of implementing greater access to CBT, and claimed this would alleviate many of the economic issues that were occurring. Layard leveraged this suggestion by reminding the Government that their own National Institute for Health and Care Excellence (NICE) had already recommended CBT as the solution to treating depression and anxiety. NICE had made this recommendation just one year prior to Layard's own pitch to the government.

Layard's lobbying and advocacy for publicly-financing CBT was answered, and the U.K. drastically increased their citizens' access to CBT through the implementation of the Improving Access to Psychological Therapies (IAPT) program. Although Professor Layard's call to action was answered, various researchers opposed his views and argued against the cost-savings he has lobbied and advocated for. As well as in the U.K., Australian economic assessments have resulted in their own Government's financing of national CBT. In Commonwealth countries, economic arguments have proved effective at convincing governments to invest in psychological care. This Capstone's Section 4 investigates the potential returns on investment of implementing an integrated psychological care model.

¹⁰⁷ K. A. Payne & G. Myrh, "Increasing Access to Cognitive-Behavioural Therapy (CBT) for the Treatment of Mental Illness in Canada: A Research Framework and Call for Action," *Healthcare Policy*, 5(3) (2010), <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2831741/>.

Family Physician Support

56 per cent of Saskatchewan FPs see 11 or more patients with mental health issues per week.¹⁰⁸ 46 per cent of FPs stated they were satisfied with the mental health care they were able to provide to patients.¹⁰⁹ Saskatchewan FPs who had mental health professionals on-site were significantly more satisfied with the level of mental health care they were able to provide to patients. This leads to the potential collaboration between policy makers and family physicians. FPs want to have more MHPs operating in their clinics, as it was found that FPs with MHPs on-site were more satisfied than those without.

The most common method of FP-MHP correspondence was through written communications. Telephone and face-to-face interactions were less common. FPs stated the strongest method of providing mental health care was by having access to psychiatrists, community mental health nurses, and other MHPs. Lastly, “the most common area for improvement in primary mental health care also fell under the category of access. Specifically, FPs felt access to psychiatrists needed to be improved.”¹¹⁰ Consulting with FPs and gaining their support is important in implementing any integrated psychological care model. Section 2.2(5) explained how integrating psychological care into primary care facilities is an effective means of offering psychological care. This is supported by the above Saskatchewan study, where FPs wanted greater access to psychiatrists and MHPs.

An Ontario study aligns with the above Saskatchewan study. Focus groups of 10 to 12 FPs were asked about their experiences regarding the provision of mental health care to their patients.

Almost identical to the FPs surveyed in Saskatchewan, it was found that difficulties in the relationship with psychiatrists was the most significant barrier to providing mental health care to

¹⁰⁸ Clatney, MacDonald, Shah, “Mental health care in the primary care setting: Family physicians’ perspectives,” *Canadian Family Physician*, 54(6), pg 884-889, 2008.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

patients in Ontario.¹¹¹ Specifically, Ontario FPs described difficulties in accessing emergency psychiatric care, having poor communications with MHPs, and cumbersome intake procedures for different mental health services. This study concludes by confirming the importance of FPs in the early detection and management of mental health problems, along with the barrier of FPs and their patients having difficult access to psychiatric care. This study illustrates that FPs would like to have greater access and communication with MHPs.

Brown et al. discovers three main findings in regards to shared mental health care services. The first finding of the study is in respect to what FPs can deliver in terms of care to their mentally ill patients: the FPs in the study stated they felt a certain obligation to treating their mentally ill clients, and that “The family doctor is seen as, or should be seen as, somebody who is less threatening, more comfortable, more approachable.”¹¹² This illustrates how FPs strive to care for mentally ill patients, yet often do not have the MHPs on staff to best complete this task. In addition, some mentally ill patients found it more acceptable to seek treatment from their FP, rather than from an MHP. This provides insight into the potential role of FPs as gatekeepers in an integrated psychological care model. While doctors wanted to help their clients with mental health issues, they also felt it took away from their ability to give medical advice regarding the patients’ physical health: “I worry sometimes that I am paying so much attention to their mental health issue that I don’t have an opportunity or I forget to think about giving good medical care. ... It’s then hard to remember when did I last take a blood pressure or do a Pap smear. ...”¹¹³ Having greater access to MHPs would allow doctors to not only provide their mentally ill patients with the help they need, but would also allow FPs to focus on properly treating their patients’ physical ailments.

¹¹¹ Craven, Cohen, Campbell, Williams, Kates, “Mental Health Practices of Ontario Family Physicians: A Study Using Qualitative Methodology,” *Canadian Journal of Psychiatry*, 42: 943-949, 1997.

¹¹² Brown, Lent, Stirling, Takhar, Bishop – “Caring for seriously mentally ill patients: qualitative study of family physicians’ experiences,” *Canadian Family Physician*, 48: 915-920, 2002.

¹¹³ Ibid.

The second finding of the study is in respect to the challenges that FPs face in participating in the shared care of their patients. Shared care includes the FP-MHP relationship, usually between an FP and a psychiatrist. FPs described a positive and effective scenario as one where there existed good communication, proper access to and availability of psychiatric care, and timely feedback from the MHP. A negative scenario was found to be one where there was no collaborative FP-MHP relationship, a lack of accountability, and fragmentation of care duties. Given this negative scenario, the result was that any shared care model would falter. This finding provides support to the idea that FPs need to be properly consulted in order for a shared care model to succeed. FPs are an integral part of the healthcare system and have valuable insight into how best to offer treatment to mentally ill patients. Another issue that was identified was that FPs found there were simply not enough psychiatrists in the healthcare system. One FP described poor psychiatric care as follows: “[It’s] not the fault of the psychiatrist; ... it’s a lack of numbers. I mean, they’re all just too busy. They do a good job, whenever you can get a patient in to see them.”¹¹⁴ It will be important to increase the number of psychiatrists present in any psychological shared care model.

The final finding of the study is in regards to FPs expectations for any shared care type of mental health model. One FP described the ideal shared care model in the following manner: “I visualize shared care as working side-by-side. It’s the way I personally feel that doctors work best and that’s working in close communication with others.”¹¹⁵ Other expectations from FPs included: timely responses from psychiatrists and MHPs, FPs having the responsibility of communicating and comforting the family of someone in a serious mental health scenario, and a shared care model allowing FPs to better care for seriously mentally ill patients.

¹¹⁴ Ibid.

¹¹⁵ Ibid.

The studies demonstrate how FPs strive to treat mentally ill patients, but do not have the resources to do so. By implementing a publicly-financed psychological care model, FPs will be given the resources they require in order to treat their mentally ill patients.

2.2(7) Legal Implications: why not challenge the lack of mental health care in the courts?

Rather than attempting to persuade any province to assume financial responsibility for mental health care, why not legally bind them to financing psychological care? Successfully arguing that any province is not providing 'medically necessary' treatment, as is required under the Canada Health Act in order to receive Canada Health Transfer (CHT) payments, would mean such a province would lose their CHT transfers.

The 2001 *Auton v A.G.B.C.* case saw the Supreme Court of Canada ruling on the case presented that the B.C. government had violated section 15 of the *Canadian Charter of Rights and Freedoms* by failing to publicly-finance autistic children's medical treatments. Auton argued that the treatment required for their child's autism was deemed 'medically necessary' and had violated her child's right to equal benefit. However, the Supreme Court ruled that although a treatment may be scientifically deemed medically necessary, this does not force the government to fund that treatment. The only reason a type of medical treatment needs to be publicly-financed is if the treatment was provided in a hospital, by a physician, or by an oral surgeon.

The Auton case delivers the conclusion that there is no legal case to be made, in terms of the Canada Health Act, regarding the need to publicly-finance psychotherapy. Although scholars have deemed

psychotherapy to be medically necessary,¹¹⁶ this is in fact irrelevant, and psychological therapy will continue to fall outside government spending.

Section 7.3 investigates legal implications for a recommended approach to treating mental illness. The Health Professions Act, Alberta Health Care Insurance Act, and Canada Health Act will be reviewed and proposed necessary changes will be outlined. These changes are meant to illustrate the actions that politicians and bureaucrats would have to take in order to establish a mental illness treatment program within Alberta.

¹¹⁶ MJ Bennett, "Is psychotherapy ever medically necessary?," *Psychiatric Services*, 47(9) (1996), <http://www.ncbi.nlm.nih.gov/pubmed/8875662>.

3.0 Methodology

3.1 Information Gathering

In order to ensure this Capstone's research was on the correct trajectory, the researcher interviewed a medical doctor. This interview informed the researcher of case studies to investigate, academic research to study, final recommendations to avoid, and major concepts to investigate.

This Capstone project relies heavily on literature reviews, international comparisons, and case studies. The literature reviews illustrate: current landscape of psychological care, the necessity of providing psychotherapy, the most optimal ways of delivery this psychotherapy, and economic benefits of such an investment. The international comparisons analyzed delivery and effectiveness of psychological models in the United Kingdom and in Australia. Canadian case studies illustrate that integrating mental health care into primary care facilities has been successful, although several shortcomings must be noted. These shortcomings are important to note so that they can be avoided if a psychological care model is integrated in Alberta.

3.2 Case Studies

In order to gain insight into what makes an integrated mental health care project successful, four types of mental health care projects were analyzed. Of the four, three showcased successful endeavors, while one illustrated how a project can fail. One project was implemented in British Columbia, one in Manitoba, and two in Ontario. The case studies illustrate the qualities that successful projects possess, as well as those qualities that lead to failure. Economic calculations illustrate how economic benefits can accrue if an investment is made in mental health, but successful implementation is required as well. Theoretical returns on investment will only begin to accrue if implementation is successful.

Investigation of the case studies was meant to test and reinforce the findings made in Section 2.2(6) regarding FP insight into what makes a shared care model successful. After analyzing the case studies, it becomes evident that many of the shared care models' successes aligned with the goals of FPs. This reinforces the findings that the goals FPs want to realize – greater access, communication, and a respectful relationship – are also what makes a shared care model successful. Furthermore, this ties into the literature which shows that integrated models are superior to referral-based, decentralized psychological models where patients must venture to private clinics.

In conclusion, the relevant literature, FP's stated objectives, and successful case studies, all show that physically integrating MHPs into primary care facilities is a strategy worth pursuing. For this reason, the economic analysis in Section 4 has been completed based off the conclusion that MHPs should be physically integrated into Primary Care Networks.

3.3 Economic Analysis

An economic analysis is outlined in Section 4 of this Capstone. One of the barriers to action is that there is a lack of economic data on whether or not investing in a psychological care model would be financially favorable. The economic analysis in the Capstone first estimates costs of proposed models, based off solutions the literature has shown to be most effective. Second, the economic analysis estimates the cost-savings that will accrue to Alberta Health Services, in avoided healthcare costs. The expected ROI and cost-savings are pieces of the framework for analysis, explained in Section 7. They provide a basis for determining which Scenario should be recommended.

International data was used where Canadian data did not exist. Uptake rates and recovery rates were based off information published through researchers' academic works. Costs of programs

were estimated from the Capstone researcher's calculations, all of which drew from various sources. The economic analysis is outlined in Section 4, with detailed information outlined in Appendices B and C.

3.4 Limitations

The main limitation of this Capstone project is a lack of data. There are no Canadian provinces that offer publicly-covered psychotherapy, and any international programs are very recent in their implementation. This Capstone's cost-savings estimates are based on the researcher's calculations, rather than on inter-provincial comparisons of actual realized savings. Another limitation is that this Capstone focuses on adults living with mental illness who have access to family physicians in primary care networks. For example, homeless and youth populations may not have this same access to FPs, and so their uptake rates may be lower than the average Canadian adult. For this reason, average uptake rates of the entire population have been found by analyzing CIHI data. A final limitation was that in some pieces of the analysis, American data was used to estimate costs to healthcare systems from mentally ill patients.

These limitations were mitigated by relying extensively on literature reviews. The cost-benefit analysis was calculated based off of available data. While no Canadian province offers universally-financed psychotherapy, there are a variety of Canadian mental health care pilot projects that were investigated to determine efficacy of integrated treatment, optimal means of implementation, and to determine where failures have occurred. One limitation of the proposed strategy is that prescription medication is not covered. This will fall to out-of-pocket payment by patients, as well as private insurance coverage. The literature shows that talk therapy is still effective even in the absence of prescription medication. Additionally, most of the Canadian population has access to prescription medication.

4.0 Findings

4.1 Case Studies: determining program efficacy in Canada and Abroad

Four Canadian case studies of integrated mental health care projects are analysed. Three of these four case studies were chosen from a list of 16 case studies. This list came from a report that was published by the Canadian Psychiatric Association, on shared mental health care in Canada.¹¹⁷ This report listed the most prominent integrated mental health services in primary care within Canada. The 16 were narrowed to three by searching for available information online. Those with the most available online information were selected. These three case studies all focused on shared care programs that were successful. For this reason, the fourth case study was found by searching for Canadian shared mental health programs that had failed. The case that was selected was the one with the most available information on a failed instance of shared mental health care in Canada.

From these case studies, it is found that integrating mental health care into primary care programs can be successful, although various shortcomings have been identified. The case studies indicate problem areas that have occurred in instances where mental health care has been integrated into primary care facilities. While this integration leads to timely patient access to services, enhanced communication between healthcare professionals, and earlier intervention in the treatment of mental illness, shortcomings include lack of family physician support, insufficient and uncertain financial funding, poor evaluation processes, damaging turnover of key personnel, and lack of accountability. In order for projects to be scaled up, they must have: FP support, proper funding, successful evaluations, greater accountability, and dedicated personnel.

¹¹⁷ Kates, Ackerman, "Shared Mental Health Care in Canada," *Canadian Psychiatric Association*, 2002.

4.1(1) Domestic Case Studies

Fraser Health Authority – a Simon Fraser area pilot project

In October 1999, one psychiatrist and two mental health nurses were integrated into two family practice clinics. “Patients were provided with timely and accessible mental health care, reinforcing a collaborative and supportive approach with family physicians.”¹¹⁸ Over the span of 18 months, “129 patients were referred and assessed, and 561 visits were conducted by the nurse and psychiatrist.”¹¹⁹

Consultations with the mental health care team were available within 21 to 28 days. This is superior to the U.K.’s IAPT wait times of 32 days. Additionally, 84 per cent of patients were satisfied with their care.¹²⁰ Patients repeatedly said that without the program, they would not have sought out psychological help. This is an important reason for integrating MHPs into primary care facilities. Ensuring mentally ill patients seek out help is an important piece of working towards recovery. Family physicians gave the pilot project a 90 per cent satisfaction rating,¹²¹ and were satisfied with the program because they were given the tools needed to intervene in patients’ mental health scenarios.

The project was restricted in scope due to lack of funding and limited evaluation processes. Programs attempting to integrate mental health care into primary care settings must realize any such move will be financially burdensome, and that evaluation processes of the program must be effective, timely, and appropriate in scope. Furthermore, funding must be guaranteed by any government, and lack of financing will undoubtedly lead to restriction or failure of services.

¹¹⁸ Isomura, Senay, Haldin, Edworthy, “Bridging with primary care: A shared-care mental health pilot project,” *BC Medical Journal*, Vol. 44, No. 8, pg 412-414, 2002.

¹¹⁹ Ibid.

¹²⁰ Ibid.

¹²¹ Ibid.

Thunder Bay Shared Mental Health Care (SMHC)

In June 2001, an SMHC clinic was introduced and co-located with an existing Primary Care Provider (PCP) in Thunder Bay, Ontario. This SMHC integrated two full-time counsellors and one psychiatrist (one quarter day per week) into the existing PCP (18,000 patients). In January 2005, a second SMHC clinic was introduced and co-located with another PCP (20,000 patients). This second SMHC integrated one full-time counsellor and one psychiatrist (one half day per week). These MHP-patient ratios are important in the Capstone researcher's economic analysis. They provide an estimate of how many MHPs are required for a given number of patients, in the Canadian context.

Gaylord, Bailey, and Haggarty illustrate two findings in respect to the Thunder Bay SMHC project. The first conclusion is that the introduction of an SMHC lead to increased access to primary mental health services.¹²² Increased access shows this program was a success, because, based on what FPs have stated about integrating psychological care, access is an important factor to achieve. Second, SMHC clinics resulted in increased detection of mental illness, along with earlier intervention in such illnesses. Earlier intervention by FPs was possible because the introduction of an SMHC provides an educational and capacity development component to FPs.

Shared Care Mental Health Care in Winnipeg Health Region

This Shared Care Mental Health Care initiative (the 'Program') was implemented in Winnipeg in 2003. The Program saw mental health care providers (psychiatrists and counsellors), co-located with primary care providers. A 2012 Evaluation Report¹²³ was conducted in order to: inform program improvement and decision making, to document learning on the implementation of the

¹²² Gaylord, Bailey, Haggarty, "Introducing Shared Mental Health Care in Northwestern Ontario: An Analysis of Changing Referral Patterns of Primary Care Providers," *Canadian Journal of Community Mental Health*, Vol. 34, No. 2, doi: 10.7870/cjcmh-2015-020, 2015.

¹²³ Goossen, Jones, Botting, Wener, Staley, Gibbens, "Shared Mental Health Care Program – Evaluation Report," *Winnipeg Regional Health Authority*, May 1 2012, http://www.wrha.mb.ca/professionals/familyphysicians/files/SC_Eval_May5-2012.pdf.

Program, and to explore the effects of the Program on primary care and how to build primary care networks as the Winnipeg Health Region moves into the future.

The Evaluation Report found that the Program resulted in: improved access to mental health services, improved primary care capacity to manage mental health, improved communication between primary care and mental health, increased mental health providers' understanding of primary care, and improved patient outcomes. The improved communication aligns with what FPs have stated they would like to gain from a shared mental health care model. The evaluation report stresses researcher Burley's findings that FPs can summarize what they want from psychiatrists as: access, communication, and a respectful relationship.¹²⁴

While successful, the Program also had a number of shortfalls. When the Program was scaled up in 2008, it faced a shortage of FPs willing to participate in the Program. However, by 2011, there was a wait list of FPs interested in participating. The evaluation report concluded that one of the most important facets of running the Program successfully was to gain the support of the FPs and to engage FPs in meaningful discussion and feedback about the Program. This reinforces the idea that FPs need to be consulted in order to: gain their support, strengthen the program, and avoid any pitfalls. Three main areas for improvement included: increased collaboration amongst healthcare professionals, ensuring all healthcare professionals had full knowledge of the Program itself and could navigate the complex mental health care network, and ensuring open communication and full support from healthcare professionals regarding the sustainability of the Program. These are all key takeaways and actionable items if any such integrated mental health care program is implemented.

¹²⁴ Burley, H.J., "What do Family Physicians Want from Psychiatrists?" *CPA Bulletin*, 29-31, 2002.

The Evaluation Report provides a guideline of effective ways to assess the success or failure of any program being implemented. This evaluation report assessed the Shared Care Mental Health Care initiative through qualitative and quantitative methods. Qualitative methods included: literature reviews of similar programs' practices and models, as well as interviews with patients, counsellors, psychiatrists, senior leaders, and FPs of the Program. Quantitative evaluation included: collection of service delivery data (wait times, volume of sessions, session length), and surveys with a five-point satisfaction scale used to convert satisfaction into a numerical value. This mixed methodology was chosen because the evaluators wanted to adequately answer their evaluation questions, but also respect the busy schedules of the Program's professionals and patients.

People's Strength in Mental Health and Wellness: Northern Ontario

This failed mental health project began in April 2013 in Northern Ontario. It was meant to address the First Nation's suicide crisis in the Weeneebayko Health Authority. Funding for the project was \$800,000. The People's Strength in Mental Health and Wellness project failed due to poor management, unaccountability of staff, turnover of a key manager, and the constant threat of retracted government piecemeal funding.¹²⁵ This failed initiative led to the conclusion that any program that will be implemented must have guaranteed financing (ideally through legislation), committed senior management, and regular audits on how government money is being allocated.

4.1(2) International Case Studies

United Kingdom

The U.K.'s investment in mental health services resulted in two notable events. The first is that many U.K. mental health agencies experienced a large increase in the number of people seeking treatment.¹²⁶ As can be seen from Excerpt 1, after 2011 the number of people seeking mental health

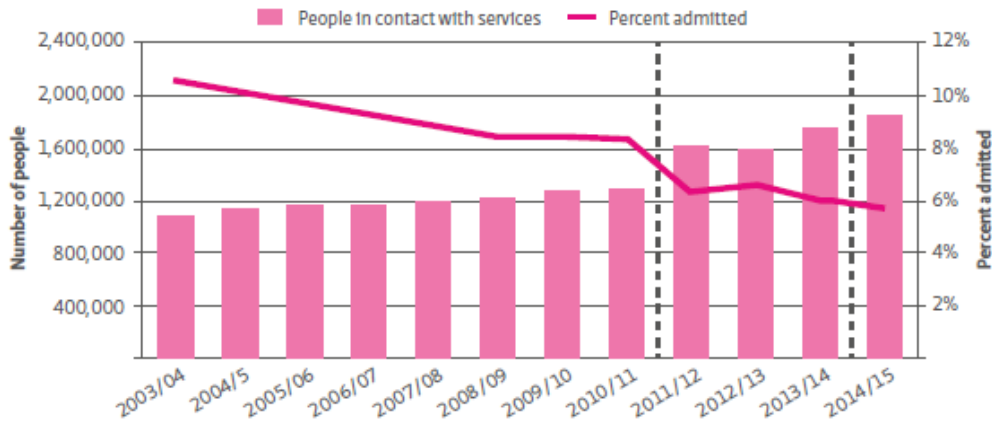
¹²⁵ Kathryn Blaze Baum, "In Attawapiskat, failed mental-health project a tale of waste," *The Globe and Mail*, April 15, <http://www.theglobeandmail.com/news/national/suicide-prevention-project-serving-attawapiskat-fell-short-of-vision/article29653230/>.

¹²⁶ Key facts and trends in mental health, Mental Health Network, March 2016, page 3.

services in the U.K. outpaced the percentage of people admitted to mental healthcare, for the first time. IAPT sessions are self-referral.

Excerpt 1: Patients seeking services vs those admitted

Figure 1. People in contact with mental health and learning disability services by highest level of care and year 2003/04–2014/15



Source: Health & Social Care Information Centre (October 2015a)

This should not be taken as evidence that more and more people have a mental illness, but rather that more people are becoming comfortable with seeking mental health care options available to them. This conclusion can be drawn due to the reduction in stigma around mental illness, and the increasing amount of people in the U.K. disclosing their mental illness to friends and family: in 2009, 58 per cent of people acknowledged they knew someone with a mental illness, as compared to 65 per cent in 2014.¹²⁷

The second notable trend deals with suicide rates, patient recovery, and employment statistics.

While the number of suicides in the U.K. have increased since 2009, the U.K.’s National Health Services (NHS) states “this rise is mainly the result of a rise in England where patient numbers overall have also increased.”¹²⁸ Alternatively, inpatient suicides have fallen 60 per cent from 2003 to 2012.¹²⁹ During 2014/15, the average wait time for U.K. citizens in queue for mental health

¹²⁷ Ibid, 7.

¹²⁸ Ibid, 2.

¹²⁹ Ibid.

treatment was 32 days.¹³⁰ This is a remarkable decrease from the pre-IAPT era's 81 day wait time during 2003.¹³¹

Throughout 2014/15, 41.8 per cent of treatment courses were wrapped up, finishing an average of 6.3 sessions.¹³² 44.8 per cent of patients recovered from their mental illness.¹³³ This is a slight increase from the 42 per cent of patients that recovered during the first year of the IAPT during 2010.¹³⁴ Lastly and also remarkably, only 7.6 per cent of U.K. citizens with a mental health problem are unemployed,¹³⁵ compared to the conservatively estimated 30 per cent statistic for Canadians.¹³⁶

These findings are important in the formulation of an Albertan psychological care model. The first takeaway is that any implemented project should anticipate citizens becoming more comfortable with the idea of seeking treatment from a psychologist or social worker. Any implemented program should not have to be concerned with scaling up in future years, however, as the U.K.'s currently recommended levels of psychologists per number of residents have been used in Section 4 calculations. These values will be sufficient in years to come, while perhaps being excessive in the initial years of implementation. The second takeaway is that suicide levels should drop when any program is implemented. As mentioned in Section 2.1(4), suicides are also costly to relevant jurisdictions, and a reduction in suicides will lead to a reduction in societal economic costs.

¹³⁰ Key facts and trends in mental health, Mental Health Network, March 2016, page 4.

¹³¹ Garry, Paley, "An audit of waiting times at a specialist psychotherapy service," *BJPsych Bulletin*, <http://pb.rcpsych.org/content/30/5/182>.

¹³² Key facts and trends in mental health, Mental Health Network, March 2016, page 4.

¹³³ Health & Social Care Information Centre (November 2015), Psychological therapies: Annual report on the use of IAPT services – England – 2014/15.

¹³⁴ Enhancing Recovery Rates in IAPT Services: Lessons from year one, IAPT, October 2011, Page 2, <http://www.iapt.nhs.uk/silo/files/summary-of-enhancing-recovery-rates-iapt-year-one-report-oct-2011-.pdf>.

¹³⁵ Key facts and trends in mental health, Mental Health Network, March 2016, page 7.

¹³⁶ Unemployment, Mental Health and Substance Abuse, heretohelp, 2014, <http://www.heretohelp.bc.ca/factsheet/unemployment-mental-health-and-substance-use>.

Australia

ATAPS, implemented in 2003, offers short-term psychological counselling to those with mild to moderate mental illness. ATAPS operates on an annual budget of 41.18 million AUD.¹³⁷ The most commonly treated mental illnesses in ATAPS are depression (54.2 per cent) followed by anxiety disorders (42.9 per cent).¹³⁸ Patients are provided six publicly-financed sessions, known as Tier 1 base funding. After the sixth session, the psychological care providers will determine if the patient would benefit from an additional six sessions.

Sessions seven through twelve financing fall under Tier 2 funding. In Tier 2 funding, the patient must pay out-of-pocket for the sessions, unless they belong to certain group of peoples: children, low-income and homeless patients, peoples at risk of suicide or self-harm, people in remote areas, Aboriginals, and women with perinatal depression. Under exceptional circumstances, patients may qualify for an additional six ATAPS sessions. These sessions are an extension of Tier 2 funding. In addition to the maximum 18 ATAPS sessions, citizens are also eligible to attend twelve group therapy sessions.

A range of professionals may deliver ATAPS, including psychologists, social workers, occupational therapists, mental health workers, and Aboriginal health workers. A mix of psychologists and social workers have been used in this Capstone's cost projections. Professionals able to refer patients to ATAPS include MDs, hospital emergency departments, nurses, and school principals.

¹³⁷ Operational Guidelines for ATAPS, Australian Government, April 2012, page 3, <http://www.aasw.asn.au/document/version/5237>.

¹³⁸ Access to Allied Psychological Services, Mental Health Services in Australia, 2014, <https://mhsa.aihw.gov.au/support/ataps/>.

86 per cent of patients have reported experiencing a medium to large improvement in their situation while utilizing ATAPS.¹³⁹ 68 per cent of those utilizing ATAPS are low income earners.¹⁴⁰ ATAPS provides a successful model of offering psychological services to low-income earners. Low-income patients often do not seek out psychological services, due to varying reasons, yet ATAPS results in a large uptake rate of low-income patients. 45 per cent of ATAPS sessions are provided in rural Australia.¹⁴¹

For Australians suffering from severe and debilitating mental illness, there are other government programs in place. The Mental Health Nurse Incentive Program and State and Government Specialist Mental Health Services are two programs for patients with severe mental illness. The Mental Health Nurse Incentive Program offers publicly-financed mental health nurses to assist those who have such a debilitating mental illness that they require intensive assistance. Specialized mental health services include funding for psychiatric hospitals, psychiatric wards in general hospitals, patients with mental illness admitted to general hospitals, and community program expenditures.

An additional program the Australian government provides is through its *Better Access to Psychiatrists, Psychologists and General Practitioners through the Medicare Benefits Schedule* initiative. This program allows for ten sessions to a psychologist to be covered under Australian Medicare. The patient must be referred to a psychologist by an MD. Under exceptional circumstances, patients may have a total of 16 sessions covered by the government. From 2006 to

¹³⁹ Outcomes and Proposed Next Steps: Review of the Access to Allied Psychological Services Component of the Better Outcomes in Mental Health Program, The Department of Health – Australian Government, February 2010, <http://www.health.gov.au/internet/publications/publishing.nsf/Content/mental-boimhc-ataps-review-toc~mental-boimhc-ataps-review-exe#succ>.

¹⁴⁰ Ibid.

¹⁴¹ Ibid.

2013, the Better Access initiative spent 2 billion AUD on psychologists and other allied health providers.¹⁴² Due to this Better Access initiative, population treatment rates for mental illness have increased from 37 per cent in 2007 to 46 per cent in 2010.¹⁴³ Whiteford et al. stated the increase in treatment rate is “remarkable by international standards. No other country of which we are aware has demonstrated such an increase within three years.”¹⁴⁴ The patients utilizing Better Access psychological treatment were patients with high or very high severity of mental illness. Patient symptoms decreased from “moderate or severe to normal or mild levels over the course of treatment.”¹⁴⁵ Lastly, the Australian Psychology Society states the Better Access initiative has resulted in a significant de-stigmatization of residents seeking mental health services.

The differences between ATAPS and the Better Access initiative are that ATAPS offers the option for patients to see a variety of different service providers, and that ATAPS offers more flexibility at the local level. ATAPS offers a substantial amount of care to rural and remote Australian residents. Better Access covers costs of community and private psychological services through national Medicare, whereas ATAPS actually salaries or contracts out mental healthcare providers to deliver services. Finally, ATAPS is meant for those suffering from medium and mild symptoms, while the Better Access initiative treats those with a severe and debilitating mental illness. The differences between the two types of programs supports the case for Section 4’s Scenario 3, which utilizes different types of treatments for different types of patients. The ATAPS and Better Access initiative demonstrates how different programs for different patients is both appropriate and successful.

¹⁴² Seven years of Better Access, Australian Psychological Society, February 2014, page 2, <https://www.psychology.org.au/Assets/Files/2013-Better-Access-APS-report.pdf>.

¹⁴³ Whiteford et al., “Estimating treatment rates for mental disorders in Australia,” *Australian Health Review*, 2014, 38, 80-85, <https://www.psychology.org.au/Assets/Files/AHR-Mental-illness-treatment-rates.pdf>.

¹⁴⁴ Seven years of Better Access, Australian Psychological Society, February 2014, page 3, <https://www.psychology.org.au/Assets/Files/2013-Better-Access-APS-report.pdf>.

¹⁴⁵ Ibid.

4.2 Economic Investigation – Does Publicly-funding CBT Result in Favorable Returns on Investment?

4.2(1) Introduction

Investing in psychotherapy in Alberta will address the \$2.3 billion of excess costs to the healthcare system that the province experiences every year. In order to determine if favorable returns on investment will be realized, three scenarios have been investigated. The first scenario determines the economic impacts of publicly-financing internet-delivered CBT only, meaning iCBT is provided to all patients. The second scenario involves publicly-financing face-to-face therapy only, meaning all patients receive a given number of face-to-face sessions with a psychologist. The final scenario uses a combination of publicly-financing iCBT and face-to-face therapy. In this third scenario, iCBT is used to treat those with mental illnesses that are mild or moderate, while face-to-face therapy will be used to treat those with a serious and debilitating mental illness.

The costs for the following three scenarios are outlined in Section 4.2(2). Cost-savings are outlined in Section 4.2(3). Each section explains how costs and cost-savings were arrived at within each scenario. Costs include six major components: psychologists, social workers, psychiatrists, iCBT software, expansion of existing PCN facilities, and senior management compensation. Cost-savings were estimated using different recovery rates as well as an estimate of how many people will actually use the services, even if they are provided at no cost to the patient. Appendices B and C provide detailed financial calculations.

4.2(2) Costs: Scenarios 1, 2, and 3

Table 4: Summary of Costs (\$) for Scenarios 1, 2, and 3

Type of Cost	Scenario 1: iCBT	Scenario 2: face-to-face	Scenario 3: mixed model
Psychologists	0	52,926,994	28,240,538
Social Workers	19,810,406	0	15,624,056
Psychiatrists	19,208,070	19,208,070	19,208,070
iCBT software	9,546,120	0	7,541,400

Expansion of PCN	2,202,240	3,904,512	3,618,816
Senior management	1,415,945	1,415,945	1,415,945
Total	52,182,781	77,455,521	75,648,825

4.2(2a) Costs - Scenario 1: iCBT only

Overview

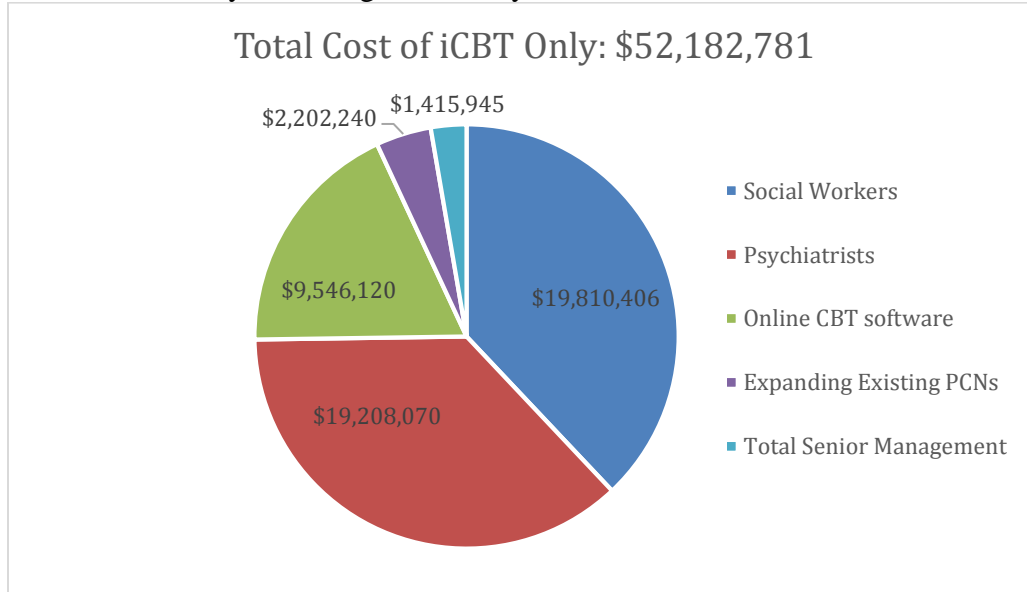
Scenario 1 investigates the costs and cost-savings of treating Alberta’s mentally ill population through the use of iCBT only, with no face-to-face sessions. Patients will be assisted through online modules by a local social worker, and will be contacted by this social worker through text messages, phone calls, and emails. The literature consistently shows that online treatments supported by clinical guidance lead to better results than online treatments with no such guidance.¹⁴⁶

Costs: \$52,182,781

Total costs of Scenario 1 are \$52,182,781. After Year One, every annual year will cost roughly the same: \$49,980,541. Scenario 1 is the least expensive of the three scenarios investigated. Social workers account for 38.0 per cent of total costs, psychiatrists: 36.8 per cent, iCBT software: 18.3 per cent, expansion of existing PCN facilities: 4.2 per cent, and compensation for senior management: 2.7 per cent.

¹⁴⁶ Richards, Richardson, “Computer-based psychological treatments for depression: a systematic review and meta-analysis,” *Clinical Psychology Review*, 32: 329-342, 2012; Spek, Cuijpers, Nyklicek et al, “Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: a meta-analysis,” *Psychological Medicine*, 37: 319-328, 2007; Palmqvist, Carlbring, Andersson, “Internet-delivered treatments with or without therapist input: does the therapist factor have implications for efficacy and cost?” *Expert Review of Neurotherapeutics*, 7: 291-297, 2007.

Chart 1: Costs of Publicly-financing iCBT Only



Psychologists: \$0

Social workers can support iCBT, rather than more expensive psychologists.¹⁴⁷

Social Workers: \$19,810,406 (38.0 per cent of total costs)

Support-clinicians will need to spend an average of 15 minutes per patient per week engaged in correspondence.¹⁴⁸ As noted above, this takes the form of text messages, phone calls, and emails.

Given the required time of 15 minutes per week, each support-clinician can then contact 30 patients per day, or 150 patients per week. Psychologists seeing patients face-to-face can treat 35 patients per week.¹⁴⁹ Based on calculations, 551 face-to-face psychologists can treat 159,101 patients per year.¹⁵⁰ This is based off the average between the IAPT’s recommended one

¹⁴⁷ Hoifodt, Strom, Kolstrup, Eisemann, Waterloo, “Effectiveness of cognitive behavioural therapy in primary health care: a review,” *Family Practise*, 28(5): 489-504, 2011, doi: 10.1093/fampra/cmr017.

¹⁴⁸ Perini, Titov, Andrews, “Clinician-assisted Internet-based treatment is effective for depression: Randomized controlled trial,” *Australian and New Zealand Journal of Psychiatry*, 43(6): 571-578, 2009, DOI: 10.1080/00048670902873722; Stott, Wild, Grey, et al. “Internet-Delivered Cognitive Therapy for Social Anxiety Disorder: A Development Pilot Series,” *Behavioural and Cognitive Psychotherapy*, 41(4): 383-397, 2013, doi: 10.1017/S1352465813000404.

¹⁴⁹ 7 patients per day * 5 days in a week = 35 patients treated per week through face-to-face therapy; Dr. John Grohol, “Your First Psychotherapy Session,” Psych Central, <http://psychcentral.com/lib/your-first-psychotherapy-session/>.

¹⁵⁰ 52 weeks in one year / 6.3 average number of face-to-face session = 8.25 cycles of patients per year; 551 recommended psychologists (average between Thunder Bay case and IAPT) treat 7 patients per day: 7

psychologist per 6,250 residents, and the Thunder Bay case's one psychologist per 9,000 residents; the average is one psychologist for every 7,625 residents – as well as assuming patients undergo weekly sessions and attend an average of 6.3 sessions. These values will result in 159,101 patients being treated each year. By scaling this number across Alberta, the researcher has calculated how many patients would be treated annually if psychologists were to treat patients through face-to-face therapy. This 159,101 is the number of patients that require treatment per year, and is used to determine how many psychologists and social workers are required in order to meet this demand.

Scaling this recommended number of psychologists (1 per 7,625 population) to Alberta, the province would require 551 face-to-face psychologists to treat these 159,101 patients.¹⁵¹ Since Scenario 1 investigates the case where all patients are treated through iCBT, then 265 support-clinicians are required to do the work of 551 face-to-face psychologists.¹⁵² This smaller number is possible because support-clinicians can support more patients (30) throughout a typical day than psychologists can treat in face-to-face sessions (7). While social workers can treat 4.3 times¹⁵³ as many patients in one week (when compared to psychologists), they end up only treating 2.1 times¹⁵⁴ as many patients as psychologists treat. This occurs because iCBT modules take three months to complete, whereas face-to-face therapy takes an average of 6.3 weeks. Although social workers monitor more patients in any given week, their patients take approximately twice as long to graduate from treatment as psychologists' patients. The result is that the efficiency of social workers is not as great as first appears.

patients/day * 551 rec. psych. * 5 days/week = 19,285 patients per week or cycle * 8.25 cycles per year = 159,101 patients per year

¹⁵¹ 4,200,000 population of Alberta / 7625 = 551 psychologists to treat Alberta's population

¹⁵² 159,101 patients treated by face-to-face psychologists / 4 cycles per year = 39,775 patients treated in every three month module / 5 working days per week = 7,955 patients requiring support each day / 30 patients can be treated by one support-clinician = 265 support-clinicians needed to treat AB

¹⁵³ 150 patients / 35 patients = 4.3x

¹⁵⁴ 551 psychologists / 265 social workers = 2.1x

Again, these 265 social workers will be able to support and treat 159,101 patients per year. Using an average wage for social workers of \$39.87 per hour,¹⁵⁵ and assuming a 37.5 hour work week, each support-clinician will have an annual salary of \$74,756.¹⁵⁶ Since 265 support-clinicians are required, annual operating costs of compensating these required social workers are \$19,810,406.¹⁵⁷

Psychiatrists: \$19,208,070 (36.8 per cent of total costs)

The Thunder Bay case study required one half day psychiatrist per week per 20,000 people. This translates into an additional 105 psychiatrists in Alberta.¹⁵⁸ Assuming a salary of \$182,934,¹⁵⁹ this will cost the province an annual \$19,208,070.¹⁶⁰ When convenient, these psychiatrists will be located within existing PCNs. However, for remote PCNs, the psychiatrist will be required to communicate with healthcare practitioners and with patients through telecommunications, email, or in-person. This is still consistent with the Schreiter et al. study which found that electronic communications can be an effective means of communications for the psychiatrist-family physician relationship.

iCBT software: \$9,546,120 (18.3 per cent of total costs)

Australia offers its own internet-based CBT software, with the option to integrate clinical supervision, for \$60 per package. The program, called 'THIS WAY UP' is a three month program. Calculations for Scenario 1 have been based off this \$60 price tag. Alberta will need to purchase software from existing companies, or simply purchase 'THIS WAY UP' software. This Australian software is available worldwide, with desktop computer capability. Support-clinicians can be

¹⁵⁵ OCCinfo: Occupations and Educational Programs, Alberta Government, 2015, <https://occinfo.alis.alberta.ca/occinfopreview/info/browse-occupations/occupation-profile.html?id=71002779>.

¹⁵⁶ \$39.87/hour * 37.5 hours * 50 weeks per year = \$74,756 annual salary

¹⁵⁷ \$74,756/year * 265 support-clinicians = \$19,810,406/year

¹⁵⁸ One half day per 20,000 residents; 4,200,000 population of AB / 20,000 = 210 half days = 105 full days = 105 psychiatrists required to treat AB

¹⁵⁹ Psychiatrist Salary (Canada), PayScale, Inc., 2016, <http://www.payscale.com/research/CA/Job=Psychiatrist/Salary>.

¹⁶⁰ \$182,934 annual salary * 105 psychiatrists = \$19,208,070 total annual compensation

integrated into the THIS WAY UP program. In Scenario 1, these support clinicians will take the form of social workers.

Assuming Alberta purchases THIS WAY UP, annual costs will be \$9,546,120.¹⁶¹ This value was arrived at by multiplying the amount of patients that social workers can support in one week, by four cycles: THIS WAY UP is completed by most patients within three months, and this allows for four cycles of patients in one year. The result is that 159,101 patients are treated every year, and this same amount of individual iCBT packages will need to be annually purchased.

Expansion of PCN Facilities: \$2,202,240 (4.2 per cent of total costs)

For the reasons outlined in relevant literature, case studies, and FP's stated objectives, it is recommended that psychologists be integrated within Alberta's Primary Care Networks. This will allow medical doctors to have easier access to MHPs, as they will be operating out of the same medical clinic.

Schreiter et al. found that integrating mental health care into multidisciplinary settings is beneficial for the following reasons: decreased healthcare costs, increased identification of mental health issues, increased accessibility to mental health services, improved patient outcomes, increased patient and provider satisfaction, and an opportunity for the psychologist, social workers, psychiatrist, and FP to all learn from one another's skill sets. These findings produce more evidence as to why the proposed method of delivery involves mental health practitioners being integrated into existing Primary Care Networks. Furthermore, Gallo Zubristky Maxwell found that integrating psychological care into multidisciplinary settings drastically improves communication across the

¹⁶¹ 39,775 patients treated every 3 months [$150 \times 265 = 39,750$ (difference in rounding)] * 4 cycles in one year = 159,100 patients treated every year, 159,100 individual packages need to be purchased

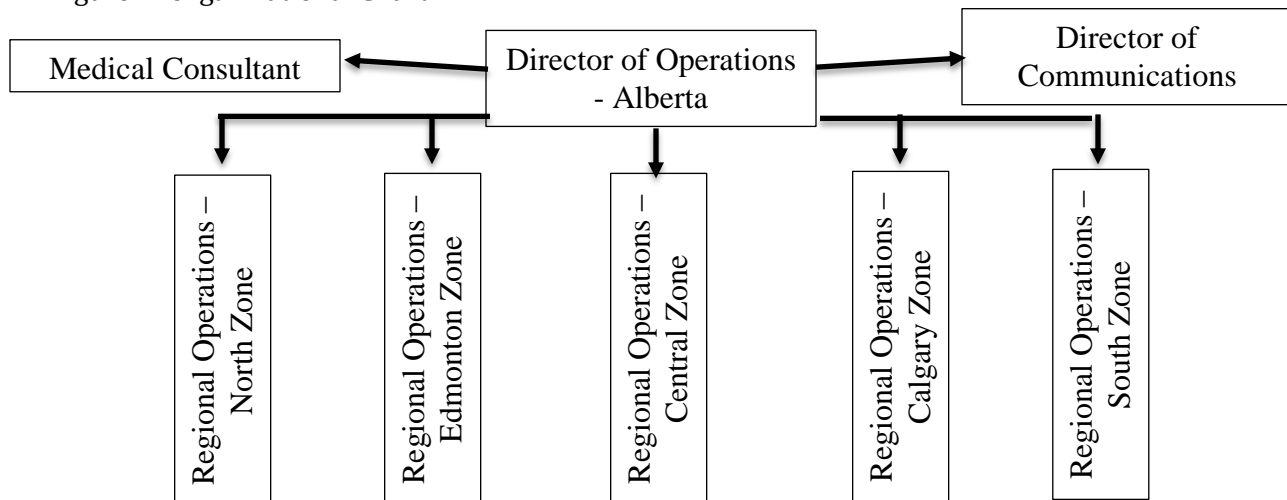
multidisciplinary team. This works to address the concerns around poor communication that were raised in the Saskatchewan and Ontario cases, as well as in the Brown et al. study.

The 265 newly integrating social workers and 105 newly integrating psychiatrists will need offices to work in. Assuming a 48 square foot office, expanding PCNs throughout Alberta will cost \$2,202,240.¹⁶² This is a one-time cost, and will not be recurring. There is a significant limitation which will arise regarding office space during implementation: the issue of a lack of space in existing PCN facilities. This \$2,202,240 price tag assumes there is room for new office space to be constructed. If there is no physical space left in a PCN facility, it will be impossible to construct a new office space. An alternative is to lease space in surrounding facilities, if available. It is important to keep social workers as close as possible to primary care facilities.

Senior Management: \$1,415,945 (2.7 per cent of total costs)

Total senior management of this Scenario will be broken down in the following manner:

Figure 2: Organizational Chart



Each Alberta Health Service (AHS) zone will have a Regional Operations Director. These Directors will be responsible for coordinating amongst social workers, psychiatrists, FPs, and delivery of iCBT sessions. They will be responsible for promoting the selected scenario within their zone, and for

¹⁶² 48 square feet * \$124 per square foot = \$5,952 * 370 new offices = \$2,202,240; New Space Addition Cost, FIXR, <http://www.fixr.com/costs/add-new-space>.

assembling any further team members they require in order to complete their job. The Director of Operations for the province of Alberta will oversee the Regional Directors. Lastly, the Director of Operations will be the liaison between any mental health strategy and the AHS.

Compensation for the Alberta Director of Operations was matched to a similar position, the Senior Provincial Medical Advisor, class: Executive Manager II. Regional Directors' salaries were set at the Executive Manager I pay scale. The Medical Consultant and Director of Communications positions were set at Senior Manager pay scales. The Medical Consultant will be responsible for consulting with medical doctors as to their opinions and insights towards the Strategy. The Director of Communications is an important role, because as health expert David Levine states, any health policy must have the media on its side in addition to excellent communications strategies. Total senior management compensation will cost an annual \$1,415,945.¹⁶³

4.2(2b) Costs – Scenario 2: face-to-face only

Overview

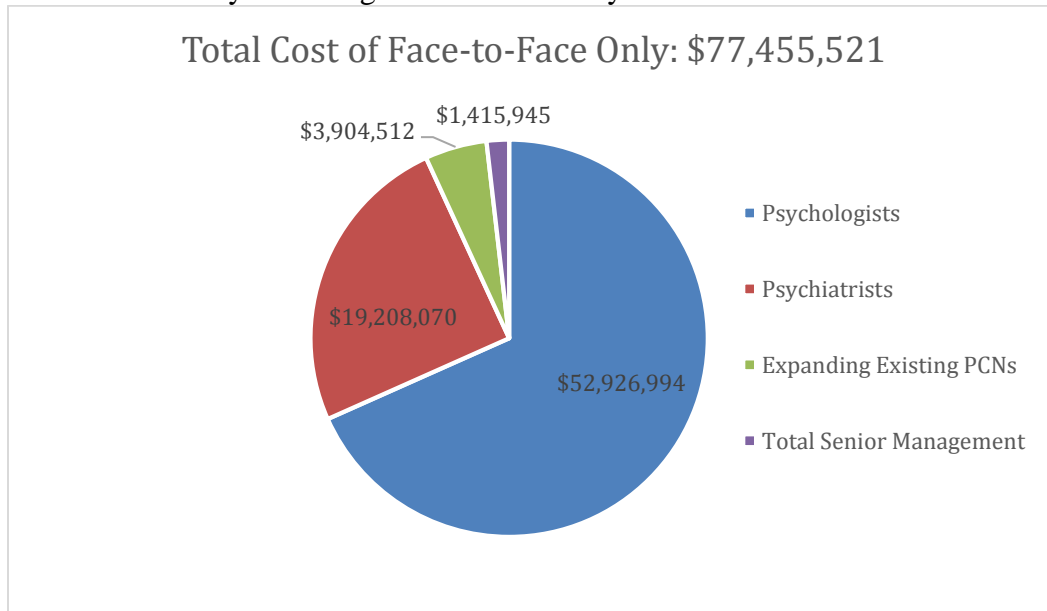
Scenario 2 investigates the costs of following the IAPT model and exclusively treating Alberta's mentally ill population through face-to-face psychotherapy sessions.

Costs: \$77,455,521

This Scenario would cost \$77,455,521 and is (narrowly) the most expensive of the three scenarios. After Year One, every year would cost roughly the same: \$73,551,009. Psychologists account for 68.3 per cent of total costs, psychiatrists: 24.8 per cent, expansion of existing PCN facilities: 5.0 per cent, and total senior management compensation: 1.8 per cent. Note that there is no need for iCBT software and therefore no social workers, while there is a greater requirement for psychologists.

¹⁶³ Director of Operations: \$318,774, Regional Operations – North Zone: \$130,000, Regional Operations – Edmonton Zone: \$170,000, Regional Operations – Central Zone: \$130,000, Regional Operations – Calgary Zone: \$190,000, Regional Operations – South Zone: \$110,000, Director of Communications: \$210,850, Medical Consultant: \$156,321; total annual compensation = \$1,415,945

Chart 2: Costs of Publicly-financing Face-to-Face Only



Psychologists: \$52,926,994 (68.3 per cent of total costs)

The U.K.'s IAPT program recommends one psychologist to practise for every 6,250 residents, while the Thunder Bay case implemented one psychologist for every 9,000 residents. The average, one psychologist for every 7,625 residents, has been used for further calculations. Scaling this number for Alberta's population of 4,200,000 means 551 new psychologists would need to be hired.¹⁶⁴ This is to ensure that the number of people receiving treatment would equal that of what is calculated from the average between the Thunder Bay case and the IAPT program. As above, assuming an average salary of \$96,056, this would cost the province \$52,926,994.¹⁶⁵ These psychologists would treat 35 patients per week.¹⁶⁶ In the U.K., patients utilized an average of 6.3 sessions, and this average of 6.3 sessions will be used in Scenario 2 calculations.¹⁶⁷ Assuming a rate of 1 session per

¹⁶⁴ 4,200,000 AB population / one psychologist per 7,625 residents = 551 psychologists required to treat Alberta

¹⁶⁵ 551 psychologists * \$96,056.25/year = \$52,926,994

¹⁶⁶ 7 patients per day * 5 days in a week = 35 patients treated per week through face-to-face therapy; Dr. John Grohol, "Your First Psychotherapy Session," Psych Central, <http://psychcentral.com/lib/your-first-psychotherapy-session/>.

¹⁶⁷ Key facts and trends in mental health, Mental Health Network, March 2016, page 4.

week, 8.25 cycles of patients can be treated every year.¹⁶⁸ Identical to Scenario 1, this equates to 159,101 patients treated per year.¹⁶⁹

Social Workers: \$0

Social workers are not required in Scenario 2 because there is no patient treatment through iCBT.

Psychiatrists: \$19,208,070 (24.8 per cent of total costs)

Same as Scenario 1.

iCBT software: \$0

Not required in this scenario.

Expansion of PCN Facilities: \$3,904,512 (5.0 per cent of total costs)

The 551 newly integrating psychologists and 105 newly integrating psychiatrists will need offices to work in. Assuming a 48 square foot office, expanding PCNs throughout Alberta will cost \$3,904,512.¹⁷⁰ This is a one-time cost, and will not be recurring. Again, the significant limitation of a lack of space within existing PCN facilities must be noted.

Senior Management: \$1,415,945 (1.8 per cent of total costs)

Same as Scenario 1.

4.2(2c) Costs – Scenario 3: two-class model of care

Overview

This third scenario will investigate a two-class model of care to address the province's mentally ill population. Class 1 of this scenario involves iCBT, while Class 2 involves face-to-face CBT sessions. This scenario is meant to leverage the relatively less expensive iCBT against the substantial amount of non-SMI patients who will benefit from such treatment. These non-SMI patients suffer from mild to medium anxiety and depression, and make up 79 per cent of the mentally ill population.¹⁷¹ Their mental illness is not debilitating. The remaining mentally ill patients, whose mental illness is too

¹⁶⁸ 52 weeks per year / 6.3 weeks per cycle = 8.25 cycles per year

¹⁶⁹ 551 psychologists * 35 sessions per week = 19,285 patients treated every week * 8.25 cycles per year = 159,101 patients treated per year

¹⁷⁰ 48 square feet * \$124 per square foot = \$5,952 * 656 new offices = \$3,904,512; New Space Addition Cost, FIXR, <http://www.fixr.com/costs/add-new-space>.

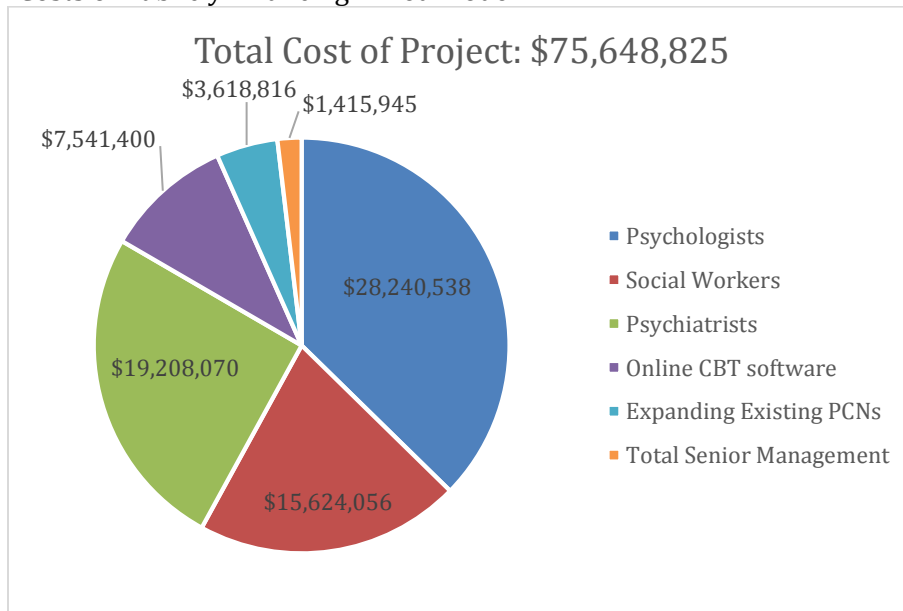
¹⁷¹ 15.9% (20.0-4.1) / 20.0% = 79.5% rounded down to 79%

debilitating for them to benefit from iCBT, will be assigned care from a psychologist for face-to-face sessions. These SMI patients suffer from severe and debilitating mental illnesses, including schizophrenia, bipolar disorder, OCD, and major depression. Their mental illnesses have a severe and debilitating effect on their life, and they cannot be effectively treated through iCBT.¹⁷² They represent 21 per cent of the mentally ill population.¹⁷³

Costs: \$75,648,825

Scenario 3 will cost \$75,648,825 during Year One. Every subsequent year will cost roughly the same: \$72,030,009. Psychologists represent 37.3 per cent of total costs, social workers: 20.7 per cent, psychiatrists: 25.4 per cent, iCBT software: 10.0 per cent, physically expanding existing clinics: 4.8 per cent, and compensating senior management: 1.9 per cent.

Chart 3: Costs of Publicly-financing Mixed Model



¹⁷² Gratzner, Khalid-Khan, "Internet-delivered cognitive behavioural therapy in the treatment of psychiatric illness," *Canadian Medical Association Journal*, March 1, 2016, DOI: 10.1503/cmaj.150007.

¹⁷³ 4.1% / 20.0% = 20.5% rounded to 21%; average of two sources: 4.2% and 4.0% = 4.1% prevalence of SMI: Mental Health By The Numbers, National Alliance on Mental Health, <https://www.nami.org/Learn-More/Mental-Health-By-the-Numbers>; Director's Blog: Mental Health Awareness Month: By the Numbers, National Institute of Mental Health, <http://www.nimh.nih.gov/about/director/2015/mental-health-awareness-month-by-the-numbers.shtml>.

Psychologists: \$28,240,538 (37.3 per cent of total costs)

21 per cent of those seeking mental health care will be provided with face-to-face CBT. The literature demonstrates that CBT is efficacious across the anxiety disorders,¹⁷⁴ and for those suffering from depression.¹⁷⁵ This face-to-face CBT constitutes Class 2 of the Strategy, and will treat the SMI patients. Gratzner and Khalid-Khan find that for those suffering from serious and debilitating mental illnesses, iCBT is not appropriate. Drawing from the United Kingdom's IAPT program, those with a mental illness used, on average, 6.3 sessions. This Capstone recommends the 21 per cent of patients receiving face-to-face CBT start with *at least* this many sessions. It is important to realize that the U.K.'s 6.3 session average includes every person seeking mental health treatment, not only those with a severe and debilitating mental illness. Therefore, the 21 per cent of patients with a severe and debilitating mental illness will undoubtedly require more than 6.3 psychotherapy sessions.

Lazar finds that for many mentally ill people, short-term therapy is not enough, and that longer-term therapy is required.¹⁷⁶ Australia found that the most therapy sessions they could offer, under exceptional circumstances, was 18. It can be inferred that the types of patients utilizing this level of Australian care were the most seriously affected by mental illness.

The Capstone researcher recommends that all patients qualifying for Alberta's Class 2 care have their situation reassessed after an initial six sessions. The psychologist will then determine if an additional six sessions will be offered. This should again be done once the twelfth session is

¹⁷⁴ Norton, Price, "A Meta-Analytic Review of Adult Cognitive-Behavioral Treatment Outcome Across the Anxiety Disorders" *The Journal of Nervous and Mental Disease*, 2007, <http://ebbp.org/resources/NortonPrice.pdf>.

¹⁷⁵ Dobson KS, "A meta-analysis of the efficacy of cognitive therapy for depression," *Journal of Consulting and Clinical Psychology*, 1989.

¹⁷⁶ Lazar SG, "The cost-effectiveness of psychotherapy for the major psychiatric diagnoses," *Psychodynamic Psychiatry*, 2014.

completed, and assess whether an additional six sessions, to a maximum of 18 sessions, should be provided. This model is based off the Australian ATAPS model.

From this point, as Lazar found, some patients may require more sessions, and even on an ongoing basis. After the eighteenth session, psychologists may offer more psychotherapy (CBT) sessions to the patient, up to a certain amount per year. This granting of more sessions must be made only in the most exceptional of circumstances. The reason patients are not cut-off after the eighteenth session is because, as the literature shows, there are certain patients who will require longer-term care. This type of extended treated has been done internationally: Germany offers up to 120 sessions of psychotherapy and up to 300 sessions of psychoanalysis.¹⁷⁷ For calculation purposes, it will be assumed that those qualifying for face-to-face psychotherapy will use an average of 16 sessions, as that is the maximum allowable high-intensity treatment sessions under NICE guidelines.¹⁷⁸ High-intensity treatment sessions would be offered to SMI patients.

The U.K.'s IAPT program recommends one psychologist for every 6,250 residents. The Thunder Bay SMHC implemented one psychologist for every 9,000 residents. The average between these two cases, one psychologist for every 7,625 residents, has again been used for further calculations. If this were scaled up across Alberta, the province would require 551 new psychologists.¹⁷⁹ Since only 21 per cent of patients will qualify for Class 2 care, 551 psychologists will not be needed. Instead,

¹⁷⁷ Erin Anderssen, "The case for publicly funded therapy," *The Globe and Mail*, May 22, 2015, <http://www.theglobeandmail.com/life/the-case-for-publicly-funded-therapy/article24567332/>.

¹⁷⁸ Gyani, Shafran, Layard, Clark, "Enhancing recovery rates: Lessons from year one of IAPT," *Behaviour Research and Therapy*, 51(9): 597-606, <http://doi.org/10.1016/j.brat.2013.06.004>.

¹⁷⁹ 4,200,000 population of AB / one psychologist per 7625 residents = 551 psychologists needed if all mentally ill Albertans received face-to-face psychotherapy

Alberta's SMI population will be treated by 294 psychologists.¹⁸⁰ These 294 psychologists will treat 33,411 SMI patients per year,¹⁸¹ assuming each SMI patient utilizes 16 face-to-face sessions.

Social Workers: \$15,624,056 (20.7 per cent of total costs)

As noted above, many of the originally calculated 551 potential psychologists are not needed, because the majority (79 per cent) of patients will be treated through Class 1 iCBT. Internet-delivered CBT still requires support from a social worker, but is not as time consuming as face-to-face sessions. The literature shows that iCBT requires between 13.9 minutes per week¹⁸² and 16.6 minutes per week¹⁸³ of clinician support. An average of 15.25, rounded to 15, minutes per week has been used for the Capstone researcher's calculations. This represents the need for 209 support-clinicians.¹⁸⁴ 209 social workers, assuming an hourly wage of \$39.87¹⁸⁵ and a 37.5 hour work week, will cost the province \$15,624,056 annually.¹⁸⁶ These social workers will be able to support 125,690 non-SMI patients per year.¹⁸⁷ This 125,690 (non-SMI patients treated) plus 33,411 (SMI patients treated per year) equals 159,101: the number of patients that require treatment based off the average of one psychologist (providing face-to-face sessions) per 7,625 residents.

¹⁸⁰ SMI patients require 16 sessions; 33,411 SMI patients treated per year / 3.25 cycles (52 weeks / 16 weeks = 3.25 cycles) / 35 sessions per psychologist per week = 294 psychologists required

¹⁸¹ 294 psychologists * 35 patients per week * 3.25 cycles = 33,443 (difference in rounding)

¹⁸² Perini, Titov, Andrews, "Clinician-assisted Internet-based treatment is effective for depression: Randomized controlled trial," *Australian and New Zealand Journal of Psychiatry*, 43(6): 571-578, 2009, DOI: 10.1080/00048670902873722; 111 total minutes / 8 weeks of therapy = 13.9 minutes per week

¹⁸³ Stott, Wild, Grey, et al. "Internet-Delivered Cognitive Therapy for Social Anxiety Disorder: A Development Pilot Series," *Behavioural and Cognitive Psychotherapy*, 41(4): 383-397, 2013, doi: 10.1017/S1352465813000404; 232 total minutes / 14 weeks of therapy = 16.6 minutes per week

¹⁸⁴ 15 minutes per patient per week; one support-clinician can monitor 7.5hrs/0.25 = 30 patients/day OR 150 patients/week; face-to-face psychologists treat 7 patients/day (source: Dr. Grohol, <http://psychcentral.com/lib/your-first-psychotherapy-session/>) OR 35 patients/week; support-clinicians can treat 2.079 as many patients online as face-to-face psychologists can treat in person (see Appendix B for calculation of 2.079 value; 551 * 79% = 435 psychologists would need to be hired following guideline of one psychologist per 7625 residents; 435/2.079 = 209 support-clinicians can treat the equivalent of 435 face-to-face psychologists

¹⁸⁵ OCCinfo: Occupations and Educational Programs, Alberta Government, <https://occinfo.alis.alberta.ca/occinfopreview/info/browse-occupations/occupation-profile.html?id=71002779>.

¹⁸⁶ 209 social workers * 37.5 hours per week * \$39.87 per hour * 50 weeks per year = \$15,624,056

¹⁸⁷ 209 social workers * 150 sessions per week * 4 cycles = 125,400 non-SMI patients treated per year (differences in rounding); 159,101 * 0.79 = 125,690

Psychiatrists: \$19,208,070 (25.4 per cent of total costs)

Same as Scenario 1 and 2.

iCBT Software: \$7,541,400 (10.0 per cent of total costs)

Calculations for Scenario 3 have been based off Alberta purchasing the THIS WAY UP program, with its \$60 price tag. Assuming Alberta purchases the THIS WAY UP program, then annual costs will be \$7,541,400.¹⁸⁸ This value was arrived at by multiplying the amount of patients that social workers can support in one week, by four cycles. THIS WAY UP is completed by most patients within three months. This allows for four cycles of patients in one year, meaning that 125,690 individual packages will need to be annually purchased.

Expanding Existing PCNs: \$3,618,816 (4.8 per cent of total costs)

The 294 newly integrating psychologists, 209 newly integrating social workers, and 105 newly integrating psychiatrists will need offices to work in. Assuming a 48 square foot office, expanding PCNs throughout Alberta will cost \$3,618,816.¹⁸⁹ This is a one-time cost, and will not be recurring. Again, the issue of limited space must be considered.

Total Senior Management: \$1,415,945 (1.9 per cent of total costs)

Same as Scenario 1 and 2.

4.2(3) Cost-savings: Scenarios 1, 2, and 3

Table 5: Summary of Cost-savings (\$) for Scenarios 1, 2, and 3

Type of Cost-savings	Scenario 1: iCBT	Scenario 2: face-to-face	Scenario 3: mixed model
Non-SMI patient recovery (57%)	247,254,600	247,254,600	247,254,600
SMI patient recovery (11%) [LOW]	0	68,664,200	68,664,200
SMI patient recovery (27%) [MEDIUM]	0	168,539,400	168,539,400

¹⁸⁸ 150 sessions per psychologist * 209 support-psychologists = 31,350 patients treated every 3 months * 4 cycles in one year = 125,400 patients treated every year * \$60 per software package = \$7,524,000 (difference in rounding)

¹⁸⁹ 48 square feet * \$124 per square foot = \$5,952 * 608 new offices = \$3,618,816; New Space Addition Cost, FIXR, <http://www.fixr.com/costs/add-new-space>.

SMI patient recovery (42%) [HIGH]	0	262,172,400	262,172,400
Total \$ saved [LOW]	247,254,600	315,918,800	315,918,800
Total \$ saved [MEDIUM]	247,254,600	415,794,000	415,794,000
Total \$ saved [HIGH]	247,254,600	509,427,000	509,427,000
ROI [LOW]	374%	308%	318%
ROI [MEDIUM]	374%	434%	450%
ROI [HIGH]	374%	558%	573%

While there are large productivity gains that will be realized from investing in psychotherapy, these do not represent healthcare system costs. Therefore, these productivity gains have been excluded from this Capstone’s cost-savings analysis. It should be mentioned that these increases in productivity will result in a variety of benefits, including: higher wages for the recovered mentally ill individual, more productive employees and therefore larger net profits for corporations, and larger tax revenues for governments due to this increase in net profits and in increased personal income. These larger tax revenues would constitute an entire analysis of their own.

This leaves direct savings to the healthcare system from investing in psychotherapy: less FP billings for mental illness as patients are redirected to more appropriate healthcare professionals, decreases in extended hospitalization stays by mentally ill patients, decreases in Emergency Room visits by those with a mental illness, and less care and support staff required to care for these mentally ill patients. Cost-savings will accrue throughout Year 1 and will be ongoing. The healthcare system cost-savings were arrived at through multiple calculations, in a two-part procedure.

Part 1:

The first value that needed to be found was the amount of healthcare costs associated with patients that suffer from major anxiety and depression. These patients will be referred to as SMI patients. These values were first determined by the researcher’s own calculations, and then compared to the findings of a published report. The report being used found the differences between those economic

costs attributed to mild depression (non-SMI patients) and those economic costs attributed to major depression (SMI patients).

The Capstone researcher's own calculations drew on available American data, as no Canadian data could be found. A 2008 article published in the *American Journal of Psychiatry* reported that in 2002, SMI patients cost the American healthcare system \$100.1 billion dollars.¹⁹⁰ The Capstone researcher then calculated how much each SMI patient in the U.S.A. cost the American healthcare system. This calculation was meant to determine the per capita costs of each SMI patient. The Capstone researcher made this per capita calculation by using the 2002 U.S.A. population and multiplying this amount by 4.1 per cent. This 4.1 per cent represents the percentage of the general population that has a serious and debilitating mental illness, and was averaged between 4.0 per cent reported by the National Alliance on Mental Illness, and the 4.2 per cent reported by the National Institute for Mental Health. This calculation: $288,369,000 * 4.1\% = 11,823,129$ SMI patients in the U.S.A. Next the per capita costs were found: $\$100,100,000,000 / 11,823,129$ SMI patients = $\$8,466.46$ /SMI patient, and represents the cost to the American healthcare system of each American with an SMI.

The next calculation that required computing was done in the Alberta context: multiplying the 2016 Alberta population by the same 4.1 per cent: $4,200,000 * 4.1\% = 172,000$ SMI patients in Alberta. This 172,000 was then multiplied by the per capita costs found in the American case: $172,000 * \$8,466.46 = \$1,457,923,702$, and represents the healthcare costs to the province caused by Albertans living with an SMI.

¹⁹⁰ Thomas Insel, "Assessing the Economic Costs of Serious Mental Illness," *The American Journal of Psychiatry*, 165(6): 663-665, 2008, <http://dx.doi.org.ezproxy.lib.ucalgary.ca/10.1176/appi.ajp.2008.08030366>.

As outlined throughout this Capstone, mental illness costs Alberta \$2.3 billion in healthcare costs every year. Therefore: $\$1,457,923,702 / \$2,300,000,000 = 63.4$ per cent of total healthcare costs attributed to mental illness are attributed to SMI patients. This leaves 36.6 per cent of healthcare costs attributed to mental illness stemming from non-SMI patients. In order to check these values against what other researchers have found, these percentages were compared to those found by Cuijpers et al.¹⁹¹ In the Cuijpers et al. Dutch study, the researchers found that SMI patients accounted for 54.5 per cent of total mental illness related economic costs, and non-SMI patients accounted for 45.5 per cent of total mental illness related economic costs. The averages between the Capstone researchers' own calculations, and those from the Cuijpers et al. study: SMI patients: 63.4%, 54.5% = 59.0%; non-SMI patients: 36.6%, 45.5% = 41.0%, were used to move onto the second calculation step.

Part 2:

The total healthcare costs to Alberta, \$2.3 billion, were then broken out into those costs associated with non-SMI patients and those associated with SMI patients: non-SMI patients: $\$2.3 \text{ billion} * 41\% = \943 million ; SMI patients: $\$2.3 \text{ billion} * 59\% = \1.357 billion . These values were then multiplied by the recovery rates of the different populations: 57 per cent for non-SMI patients,¹⁹² and (in Scenario 1) 0 per cent for SMI patients. Scenarios 2 and 3 use SMI recovery rates taken from the relevant literature. This 57 per cent is the average from recovery rates reported by Australia's THIS WAY UP program (50 per cent) and that published by researchers Stott Wild Grey et al. (64 per cent). iCBT recovery rates were used because only non-SMI patients undergo iCBT therapy, as well

¹⁹¹ Cuijpers et al., "Economic costs of minor depression: a population-based study," *Acta Psychiatrica Scandinavica*, 115(3): 229-236, 2007.

¹⁹² Average between THIS WAY UP (50%) and Stott Wild Grey 2013 (64%) = 57%; Internet-delivered Cognitive Behaviour Therapy, THIS WAY UP, <https://thiswayup.org.au/how-we-can-help/internet-delivered-cognitive-behaviour-therapy/>; Stott, Wild, Grey, et al. "Internet-Delivered Cognitive Therapy for Social Anxiety Disorder: A Development Pilot Series," *Behavioural and Cognitive Psychotherapy*, 41(4): 383-397, 2013, doi: 10.1017/S1352465813000404

as the fact that iCBT and face-to-face therapy result in identical remission rates for non-SMI patients. While some SMI patients may recover using iCBT, the literature shows that more than likely, they will not.¹⁹³ For this reason, the conservative estimate of a zero per cent recovery rate for SMI patients has been used in Section 4.2(3a). Lastly, the initial direct healthcare savings were then multiplied by the estimated uptake rates of 46 per cent to arrive at the final direct healthcare savings value.¹⁹⁴

4.2(3a) Cost-savings – Scenario 1: iCBT only

Cost-savings: \$247,254,600

The final values, and the implicated calculations, for Scenario 1 are shown in Table 6:

Table 6: Scenario 1 Cost-savings Projections, Broken Out by Patient Type

	[1]	[2]
	57% (iCBT for non-SMI)	0% (iCBT for SMI)
Direct Healthcare Savings (\$) [assuming 100% uptake rate]	$\$943,000,000 * 57\% = \$537,510,000$	$\$1,357,000,000 * 0\% = \0
Direct Healthcare Savings (\$) [46% uptake rate]	$\$537,510,000 * 46\% = \$247,254,600$	$\$0 * 46\% = 0\$$

Table 7: Scenario 1 Aggregated Cost-savings Projections (non-SMI + SMI)

Total for Aggregated Patients	[1+2]
	57% (iCBT for non-SMI) + 0% (iCBT for SMI)
Direct Healthcare Savings (\$)	$\$247,254,600 + \$0 = \$247,254,600$

Return on Investment: 374%

Scenario 1 calculations peg non-SMI patient recovery rates at 57 per cent, and SMI patient recovery rates at 0 per cent. Figure 3 represents a visual of the cost to cost-savings of an investment into Scenario 1. Table 8 represents the ROI calculations. ROI calculations use cost and cost-savings values from Sections 4.2(2) and 4.2(3).

¹⁹³ Gratzner, Khalid-Khan, "Internet-delivered cognitive behavioural therapy in the treatment of psychiatric illness," *Canadian Medical Association Journal*, March 1, 2016, DOI: 10.1503/cmaj.150007.

¹⁹⁴ Exploring the 70/30 Split: How Canada's Health Care System is Financed, CIHI, 2005, https://secure.cihi.ca/free_products/FundRep_EN.pdf.

Figure 3: Scenario 1 Cost vs Savings

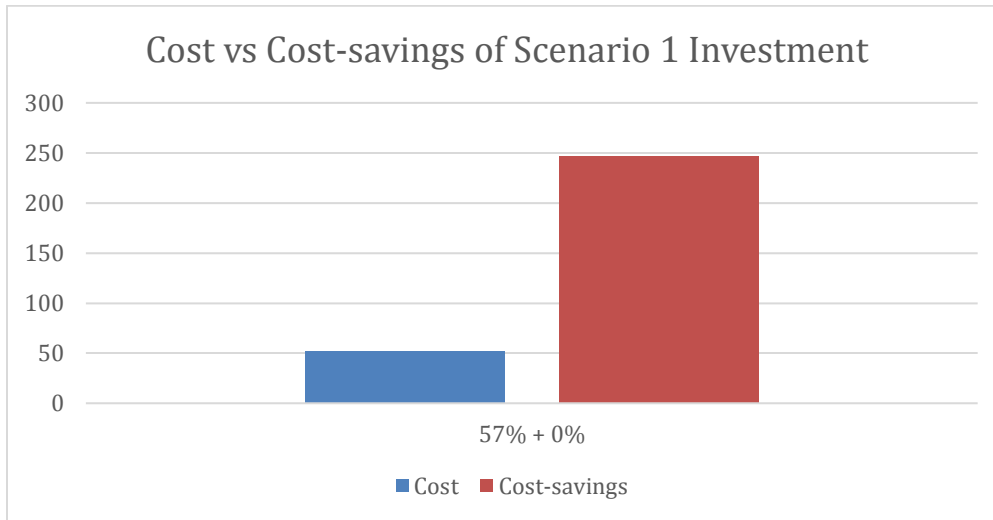


Table 8: Scenario 1 ROI Calculations

ROI
57% + 0%
374% ¹⁹⁵

Treating patients only through iCBT software does benefit a majority of Alberta’s mentally ill patients. However, the province’s non-SMI patients do not account for a majority of costs to the healthcare system. Non-SMI patients account for 79 per cent of the mentally ill population, yet only account for 41 per cent of the costs that mentally ill people place on the healthcare system. This is because SMI patients, for example debilitating cases of schizophrenia, are high-frequent users of acute healthcare services, whereas those with mild anxiety and mild depression, while greater in number, place relatively smaller strains on healthcare services. A 374 per cent return on investment will be compared to those found in Scenarios 2 and 3.

¹⁹⁵ $(\$247,254,600, -\$52,182,781) / (\$52,182,781) = +374\%$

4.2(3b) Cost-savings – Scenario 2: face-to-face only

Cost-savings: \$315,918,800, \$415,794,000, \$509,427,000

As outlined in Section 4.2(3) above, the same breakdown of healthcare costs associated with non-SMI patients (\$943,000,000 or 41 per cent) and SMI patients (\$1,357,000,000 or 59 per cent) were used for cost-savings calculations.

The cost-savings from investing in psychotherapy within Alberta under Scenario 2 have been further estimated under three different sub-scenarios. Each sub-scenario utilizes the values in the above paragraph. Each different sub-scenario has two parts to it. The first part of each sub-scenario encompasses the 57 per cent recovery rate for those being treated with internet-delivered CBT.¹⁹⁶ The second part of each scenario uses recovery rates for those undergoing face-to-face sessions, and are based on four systematic literature reviews. These systematic literature reviews found that for those with an SMI, recovery rates ranged from 11 per cent to 42 per cent.¹⁹⁷ The researchers of the report on the systematic reviews believed the variance in recovery rates are a result of varying levels of strictness in what defines ‘recovery’. More stringent definitions of recovery resulted in the low of 11 per cent, while less stringent definitions resulted in 42 per cent. Taken in aggregate, the following three sub-scenarios have been determined:

1. 57% iCBT recovery rate + 11% face-to-face recovery rate
2. 57% iCBT recovery rate + 27% face-to-face recovery rate
3. 57% iCBT recovery rate + 42% face-to-face recovery rate

¹⁹⁶ Internet-delivered Cognitive Behaviour Therapy, THIS WAY UP, <https://thiswayup.org.au/how-we-can-help/internet-delivered-cognitive-behaviour-therapy/>; Stott, Wild, Grey, et al. “Internet-Delivered Cognitive Therapy for Social Anxiety Disorder: A Development Pilot Series,” *Behavioural and Cognitive Psychotherapy*, 41(4): 383-397, 2013, doi: 10.1017/S1352465813000404; average of 50% (THIS WAY UP) and 64% (Stott Wild Grey et al.) = 57%

¹⁹⁷ Drake, Whitley, “Recovery and Severe Mental Illness: Description and Analysis,” *Canadian Journal of Psychiatry*, 59(5), 236-242, 2014, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4079142/>.

These sub-scenarios, and their respective recovery rates, were then multiplied by the non-SMI and SMI patients' attributable healthcare costs, in order to determine the healthcare costs that will be avoided due to patient recovery. These numbers were also multiplied by the 46 per cent uptake rate. The final values of direct healthcare savings from investing in Scenario 2, and the implicated calculations, are shown in Table 9:

Table 9: Scenario 2 Cost-savings Projections, Broken Out by Patient Type

	[1]	[2]	[3]	[4]
	57% (iCBT)	11% (f2f)	27% (f2f)	42% (f2f)
Direct Healthcare Savings (\$) [assuming 100% uptake rate]	$\$943,000,000 * 57\% = \$537,510,000$	$\$1,357,000,000 * 11\% = \$149,270,000$	$\$1,357,000,000 * 27\% = \$366,390,000$	$\$1,357,000,000 * 42\% = \$569,940,000$
Direct Healthcare Savings (\$) [46% uptake rate]	$\$537,510,000 * 46\% = \$247,254,600$	$\$149,270,000 * 46\% = \$68,664,200$	$\$366,390,000 * 46\% = \$168,539,400$	$\$569,940,000 * 46\% = \$262,172,400$

Table 10: Scenario 2 Aggregated Cost-savings Projections (non-SMI + SMI)

	[1+2]	[1+3]	[1+4]
	57% iCBT + 11% f2f	57% iCBT + 27% f2f	57% iCBT + 42% f2f
Direct Healthcare Savings (\$)	$\$247,254,600 + \$68,664,200 = \$315,918,800$	$\$247,254,600 + \$168,539,400 = \$415,794,000$	$\$247,254,600 + \$262,172,400 = \$509,427,000$

Depending on how well patients recover, cost-savings range from a low of \$315,918,800 to a high of \$509,427,000.

Return on Investment: 308%, 434%, 558%

Scenario 2 calculations produce three different sub-scenarios. Each sub-scenario assumes a 57 per cent iCBT recovery rate of non-SMI patients. The first sub-scenario assumes an 11 per cent face-to-face recovery rate, the second assumes a 27 per cent face-to-face recovery rate, and the third assumes a 42 per cent recover rate. Figure 4 represents a visual of the cost to cost-savings of an

investment into Scenario 2. Table 11 represents the ROI calculations. ROI calculations use cost and cost-savings values from Sections 4.2(2) and 4.2(3).

Figure 4: Scenario 2 Cost vs Savings

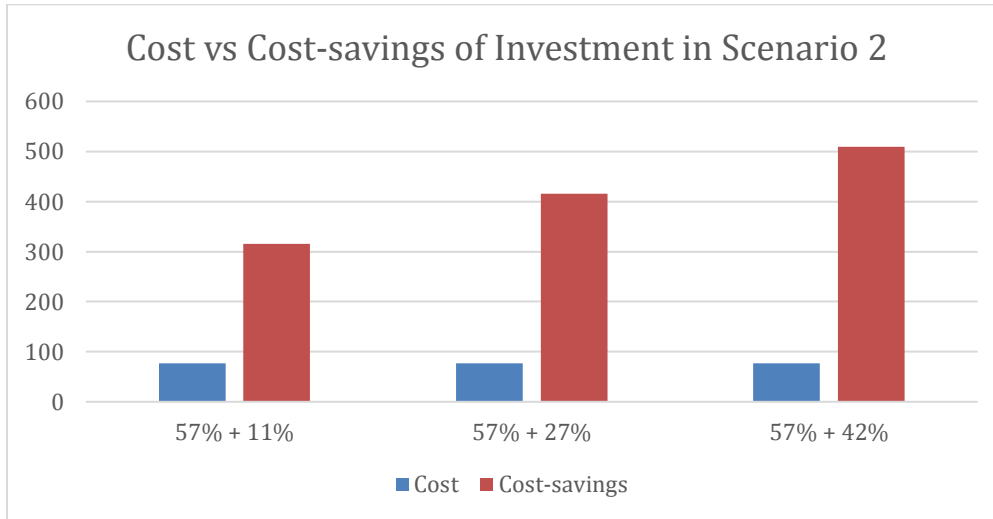


Table 11: Scenario 2 ROI Calculations

ROI		
57% + 11%	57% + 27%	57% + 43%
308% ¹⁹⁸	434% ¹⁹⁹	558% ²⁰⁰

As SMI patient recovery rates increase, so do the returns on investment. Even at the lowest end of 11 per cent SMI patient recovery, there is still a strong ROI that results from less SMI patients placing burdens on the healthcare system. Again, these returns on investment will be compared with the other scenarios.

4.2(3c) Cost-savings – Scenario 3: two-class model of care

Cost-savings: \$315,918,800, \$415,794,000, \$509,427,000

As in the above scenarios, the portions of total healthcare costs attributable to non-SMI patients and SMI patients were then multiplied by recovery rates in the different sub-scenarios. Finally, these

¹⁹⁸ $(\$315,918,800 - \$77,455,521) / (\$77,455,521) = +308\%$

¹⁹⁹ $(\$415,794,000 - \$77,455,521) / (\$77,455,521) = +434\%$

²⁰⁰ $(\$509,427,000 - \$77,455,521) / (\$77,455,521) = +558\%$

values were multiplied by the 46 per cent uptake rate. These cost-savings are identical to those outlined in Scenario 2 because iCBT recovery rates for non-SMI patients are the same as recovery rates for face-to-face therapy for non-SMI patients.²⁰¹ The returns on investment will differ due to different costs of each scenario. The final values, and the implicated calculations, are shown in Table 12. The aggregated cost-savings are shown in Table 13.

Table 12: Scenario 3 Cost-savings Projections, Broken Out by Patient Type

	[1]	[2]	[3]	[4]
	57% (iCBT)	11% (f2f)	27% (f2f)	42% (f2f)
Direct Healthcare Savings (\$) [assuming 100% uptake rate]	\$943,000,000 * 57% = \$537,510,000	\$1,357,000,000 * 11% = \$149,270,000	\$1,357,000,000 * 27% = \$366,390,000	\$1,357,000,000 * 42% = \$569,940,000
Direct Healthcare Savings (\$) [46% uptake rate]	\$537,510,000 * 46% = \$247,254,600	\$149,270,000 * 46% = \$68,664,200	\$366,390,000 * 46% = \$168,539,400	\$569,940,000 * 46% = \$262,172,400

Table 13: Scenario 3 Aggregated Cost-savings Projections (non-SMI + SMI)

	[1+2]	[1+3]	[1+4]
	57% iCBT + 11% f2f	57% iCBT + 27% f2f	57% iCBT + 42% f2f
Direct Healthcare Savings (\$)	\$247,254,600 + \$68,664,200 = \$315,918,800	\$247,254,600 + \$168,539,400 = \$415,794,000	\$247,254,600 + \$262,172,400 = \$509,427,000

Return on Investment: 318%, 450%, 573%

Figure 5 represents a visual of the cost to cost-savings of an investment into Scenario 3. Table 14 represents the ROI calculations. ROI calculations use cost values from Section 4.2(2) and cost-savings values from Section 4.2(3).

²⁰¹ Gratzner, Khalid-Khan, "Internet-delivered cognitive behavioural therapy in the treatment of psychiatric illness," *Canadian Medical Association Journal*, March 1, 2016, DOI: 10.1503/cmaj.150007.

Figure 5: Scenario 3 Cost vs Savings

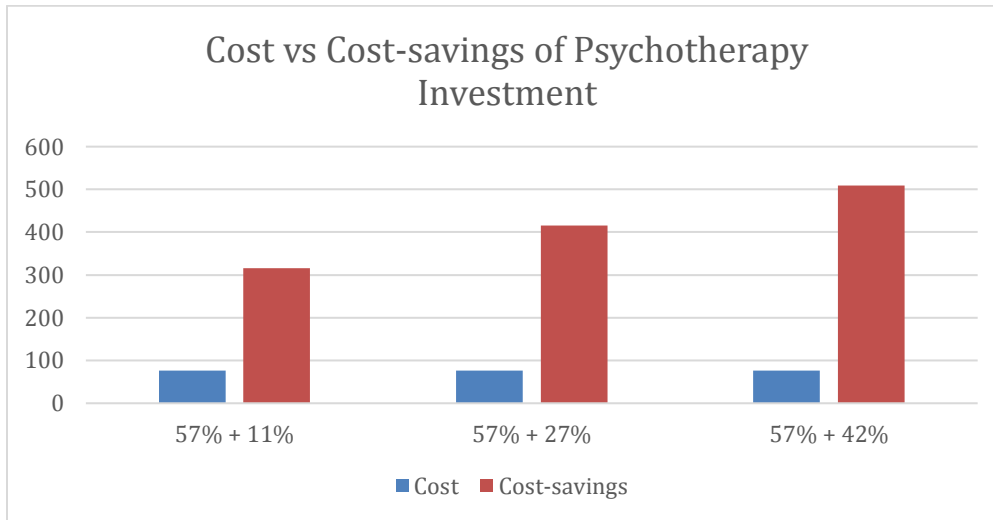


Table 14: Scenario 3 ROI Calculations

ROI		
57% + 11%	57% + 27%	57% + 42%
318% ²⁰²	450% ²⁰³	573% ²⁰⁴

As SMI patient recovery rates increase, so do the returns on investment. Even at the lowest end of 11 per cent SMI patient recovery, there is still a strong ROI that results from less SMI patients placing burdens on the healthcare system. The only difference between Scenario 3 ROI and Scenario 2 ROI is that Scenario 3 achieves the same cost-savings, but at slightly lower costs. However, it should be noted that there will be increased coordination issues with Scenario 3, as it is much more complex than Scenario 2.

4.2(4) Analysis of Scenarios 1, 2, and 3

Statistics on the three scenarios have been compiled into Table 15:

Table 15: Comparing Scenario Statistics

Scenario Statistics	Scenario 1	Scenario 2	Scenario 3
Costs (\$)	52,182,781	77,455,521	75,648,825

²⁰² $(\$315,918,800 - \$75,648,825) / (\$75,648,825) = +318\%$

²⁰³ $(\$415,794,000 - \$75,648,825) / (\$75,648,825) = +450\%$

²⁰⁴ $(\$509,427,000 - \$75,648,825) / (\$75,648,825) = +573\%$

Cost-savings (\$)	247,254,600	315,918,800 – 509,427,000	315,918,800 – 509,427,000
ROI (%)	374	308 – 558	318 – 573
Social workers (#)	265	0	209
Psychologists (#)	0	551	294
Psychiatrists (#)	105	105	105
Total new hires (#)	370	656	608

Scenario 1: Analysis

Pros: simpler coordination, less costs

Scenario 1 requires the least amount of total hires. This is made possible because of the reliance on iCBT, and the resulting increased productivity from support-clinicians having to correspond with patients rather than sit down for more lengthy face-to-face sessions. Hiring less clinicians makes it easier from an implementation standpoint: less new hires means less wages and less space needs to be found for these employees to work in. Employing support-clinicians also reduces the importance of physically integrating MHPs into PCN facilities. While still important to integrate, all social worker-patient correspondence is done electronically or through the telephone, so there is less necessity for integrating social workers directly into the PCN. Therefore, lack of space becomes less of an issue.

Scenario 1 also makes use of less expensive social workers, and saves money since the more expensive psychologists do not need to be hired. Money is also saved because SMI patients are virtually ignored in this Scenario. SMI patients would require approximately 16 face-to-face sessions, making them an expensive type of patient to treat. Use of social workers and the lack of accommodation for SMI patients makes Scenario 1 the least expensive of all three scenarios, and therefore potentially the most politically feasible.

Cons: ignores the largest strain on costs to the healthcare system

While ignoring SMI patients is an advantage from a cost standpoint, it is also the largest disadvantage of Scenario 1. Those with a debilitating illness are free to seek iCBT treatment, but the literature shows they will likely not be able to recover with such treatment. While not offering

appropriate face-to-face treatment for SMI patients is undesirable for moral reasons, it is also undesirable for economic reasons. SMI patients cost the Alberta healthcare system an annual \$1,357,000,000. By treating only non-SMI patients, the province would be overlooking patients that place the largest strains on the provincial healthcare system. Non-treatment of SMI patients is the reason that Scenario 1 has the least amount of projected cost-savings. Lastly, Scenario 1 offers a poor investment choice: social workers are being paid to monitor SMI patients while they use iCBT, yet no cost-savings accrue from this investment. Every dollar spent on a social worker monitoring the iCBT of an SMI patient is a dollar that generates zero cost-savings and poor returns on investment.

Scenario 2: Analysis

Pros: large cost-savings, straightforward implementation

Scenario 2 treats all of Alberta's mentally ill population in the same way. It addresses both the more numerous non-SMI patients, as well as the more costly SMI patients. Therefore, Scenario 2 offers the potential for massive cost-savings in healthcare dollars. An aspect that strengthens Scenario 2's political feasibility is that every Albertan is given access to the same treatment, so no patient will feel they are subjected to receiving lower quality treatment. The final advantage for Scenario 2 is that, similar to Scenario 1, it is straightforward in its implementation. The coordination required to successfully implement Scenario 2 is much lower than that required for Scenario 3.

Cons: requires the most new hires, large price tag

Scenario 2 requires the most hires of the three scenarios. 551 psychologists would need to be hired, as well as physically integrated into PCN facilities. Two logistical issues arise: the first is the issue of where these 551 psychologists will come from. It will be difficult to hire 551 new psychologists in the short-term, and many will most likely need to be imported from outside Alberta. The second issue is that of integration. It will be difficult to find physical space within PCN facilities, and many psychologists may not be able to have an office within an existing PCN. If psychologists are not integrated into PCNs, this will lead to weaker patient recovery rates. For these reasons, Scenario 2

is the most expensive of the three scenarios. Lastly, Scenario 2's low end ROI of 308 per cent is less than the predicted ROI arising from Scenario 1. There is a chance that the more expensive Scenario 2 will lead to a less favorable ROI than the relatively cheaper Scenario 1.

Scenario 3: Analysis

Pros: slightly less expensive than Scenario 2

Scenario 3 offers a combination of social workers and face-to-face psychological care. In terms of costs, Scenario 3 is almost \$2 million less than Scenario 2, yet leads to the same cost-savings.

However, this is only a 2.4 per cent reduction in costs,²⁰⁵ and begins to lose significance when the scale of such a project is considered. Scenario 3 gains a numerical advantage over Scenario 2 because it leverages the less expensive, yet still effective, iCBT treatment for non-SMI patients, while still adequately addressing the more resource-intensive SMI patients. Again, however, this only represents a reduction in cost of 2.4 per cent.

Cons: complex implementation, stakeholder pushback

Scenario 3 would involve complicated implementation and operation – in a far greater way than Scenarios 1 and 2. Three types of new hires, rather than two, would need to be coordinated.

Scenario 3 has more aspects to it than Scenarios 1 and 2, and will be difficult to implement and operate.

Scenario 3 allocates different levels of therapy to different types of patients. Expect stakeholder pushback from patients, as they are notified that they have or have not qualified for either iCBT therapy or face-to-face CBT. Undoubtedly there will be patients that want face-to-face therapy, but whose condition lends itself to qualifying for iCBT instead.

²⁰⁵ $(\$75,648,825 - \$77,455,521)/(\$75,648,825) = -2.4\%$

Scenario 3 ultimately falls short in terms of the coordination issues present in iCBT treatment for non-SMI patients. 257 psychologists are needed to treat non-SMI patients in face-to-face therapy (non-SMI patients utilize 3.72 sessions),²⁰⁶ while 209 social workers are required to support these same non-SMI patients through iCBT. The result is that there is not much of a difference in the number of clinicians required in treating non-SMI patients through either face-to-face therapy or through iCBT. Furthermore, costs are added when treating patients with iCBT because the software packages must be purchased in addition to compensating the support-clinicians. This further offsets the savings accrued by hiring less-expensive social workers. Additionally, in face-to-face therapy, more lengthy treatment sessions are required, but patients graduate from the face-to-face program (3.72 weeks) much more quickly than iCBT patients graduate (13 weeks). Put another way, iCBT non-SMI patients require 195 minutes of clinician treatment,²⁰⁷ while face-to-face non-SMI patients require 186 minutes of treatment (although psychologists' salaries are greater than social workers).²⁰⁸ While this additional nine minutes begins to be offset by the social workers less-expensive salary, cost becomes even more comparable between the two situations when the iCBT software packages are factored in as well. This is why it is simply not worth it to coordinate iCBT for non-SMI patients, as the tradeoff is that the 48 clinician difference plus the iCBT software costs (translated into a savings of \$2 million), adds another layer of complexity to Scenario 3. Substantial cost-savings only occur when all mentally ill patients are treated through less-expensive social workers, and when SMI patients' proper treatment is ignored. The Capstone researcher has deemed that this increased implementation complexity is not worth the \$2 million in avoided costs.

The real avoided costs of implementation, as found in Scenario 1, occur when SMI patients are simply treated through iCBT. By ignoring the face-to-face therapy needs of SMI patients (16

²⁰⁶ Appendix B

²⁰⁷ 15 minutes per week * 13 weeks = 195 total minutes

²⁰⁸ 50 minutes per session * 3.72 sessions = 186 total minutes

sessions), a large amount of costs are avoided. However, as noted in the disadvantages of Scenario 1, the flipside is that ignoring these SMI patients reduces the potential cost-savings.

4.3 Prescription Medication: out-of-scope, politically infeasible, and not required

Although Hunsley Elliot Therrien found that psychotherapy works best when used in conjunction with medication, funding prescription medication is considered to be outside the scope of this Capstone. Prescription medication would mean additional costs to each of the scenarios, and would warrant further research of its own. Furthermore, there would be great public pushback if prescription medication was offered to those with mental illness, but not to other types of illnesses. For example, if mentally ill patients are provided with medication, then how will sufferers of diabetes feel when they cannot have their medication publicly paid for? Additionally, 91 per cent of Canadians with a mental illness already have access to prescription medication,²⁰⁹ indicating that access to prescribed drugs is relatively comprehensive already, through private insurance.

²⁰⁹ Erin Anderssen, "The case for publicly funded therapy," *The Globe and Mail*, May 22, 2015, <http://www.theglobeandmail.com/life/the-case-for-publicly-funded-therapy/article24567332/>.

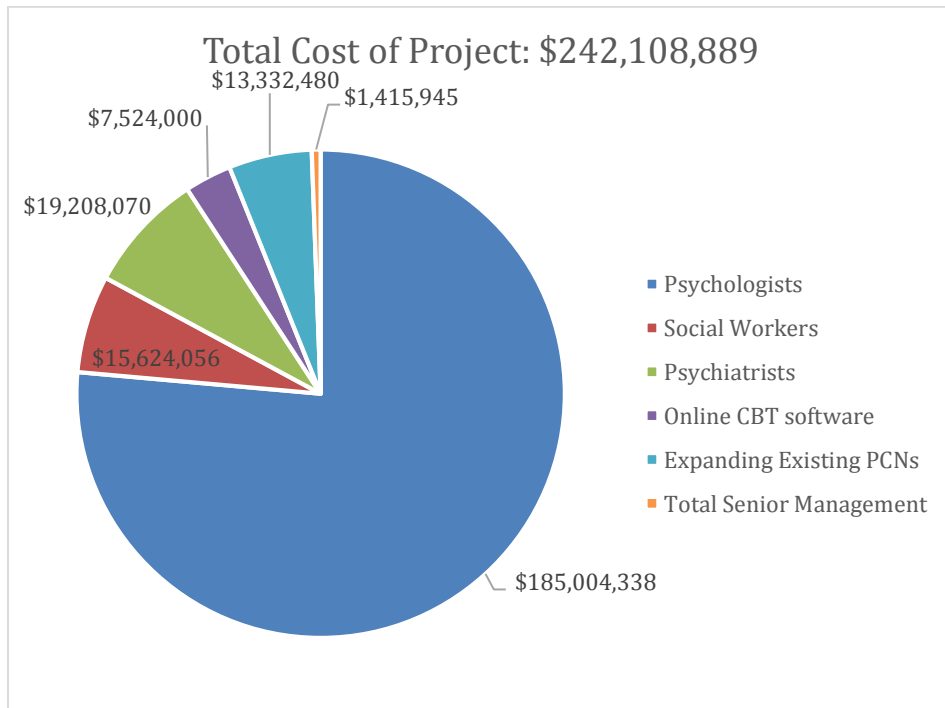
5.0 Arguments Against Publicly-funding CBT

5.1 Further Investigating Psychodynamic Psychotherapy

One of the issues of why CBT is not currently publicly-funded in Canada is because there are a substantial number of psychologists who discredit claims that CBT is the most effective method of treatment. These claims were investigated in Section 2.2(4), by reviewing relevant literature on the success rates of CBT versus psychodynamic psychotherapy.

Upon completing Section 4, economic calculations of implementing psychodynamic psychotherapy will now be determined. Scenario 4 costs are estimated at \$242,108,889:

Chart 4: Funding iCBT (non-SMI patients) and Psychodynamic Psychotherapy (SMI patients)



The majority of these costs are in hiring enough psychologists to treat patients with an SMI.

Assuming an average of 100 psychodynamic therapy sessions, or two years of therapy, 1,926

psychologists would be needed to treat Alberta's SMI patient population.²¹⁰ At an average salary of \$96,056, this amounts of \$185,004,338 annually.²¹¹ Long-term therapy for SMI patients was used in calculations, because for SMI patients, "short-term psychotherapy seems not to be sufficient."²¹²

This Scenario 4 continues to treat non-SMI patients through iCBT. Although Scenario 4's \$242,108,889 price tag would still be less than its potential cost-savings (assumed to be the same as in Scenario 2 and 3), Scenario 4 is impractical for two major reasons. The first is cost: \$242 million is a substantial amount of taxpayers' money. However, AHS 2016-17 budget is \$14.3 billion. This \$242 million would represent 1.69 per cent of healthcare expenditures. Research shows that Canada spends seven per cent of its healthcare budget on mental health, while the U.K. spends 11 per cent.²¹³ Even if this 1.69 per cent were added to Alberta's current seven per cent expenditures (assuming Alberta spends the same percentage on mental health as Canada), the total amount would be less than the U.K.'s 11 per cent outlay. But again, taxpayers would be very uncertain about an addition \$242 million added expenditure line item in the provincial budget.

Regardless of the cost, Scenario 4 is disregarded as a potential opportunity for Alberta because of the almost 2,000 psychologists that would need to be hired. The College of Alberta Psychologists' Member Directory lists 2,599 registered psychologists in Alberta. Hiring 1,926 more psychologists would be close to doubling this amount of psychologists. It would be incredibly difficult to hire this

²¹⁰ 159,101 total patients must be seen (based off usage of 1 psychologist per 7,625 residents); iCBT sessions: 209 psychologists * 150 sessions per psychologist per week * 4 cycles of patients in 1 year = 125,400 patients treated; 1,926 psychologists required for face-to-face psychodynamic therapy * 35 sessions per psychologist per week * 0.5 cycles per year = 33,705 sessions; 125,400 iCBT sessions + 33,705 face-to-face psychodynamic therapy sessions = 159,105 total sessions (matches total patients seen based off 1 psychologist per 7,625 residents)

²¹¹ \$96,056 annual salary * 1,926 psychologists = \$185,003,856 total annual compensation (difference in rounding)

²¹² Leichsenring, Rabung, "Long-term psychodynamic psychotherapy in complex mental disorders: update of a meta-analysis," *The British Journal of Psychiatry*, 199(1): 15-22, June 2011, doi: 10.1192/bjp.bp.110.082776.

²¹³ Jacobs, Dewa, Lesage, Vasiliadis, Escobar, Mulvale, Yim, *The Cost of Mental health and substance abuse services in Canada*, *Institute of Health Economics*, Edmonton, Alberta, 2010, <http://www.ihe.ca/documents/Cost%20of%20Mental%20Health%20Services%20in%20Canada%20Report%20June%202010.pdf>.

many psychologists, since approximately 1,312 Albertans graduate with a bachelor's degree, major in psychology, in any given year.²¹⁴ These 1,312 newly-graduating psychologists must meet the demand of current private psychological clinics, and community clinics in Alberta. If 1,926 new psychologists needed to be hired, then psychologists would need to be imported from other provinces, and likely other countries as well.

Furthermore, it would be very expensive to find office spaces for these psychologists, and it would be extremely difficult, if not impossible, to integrate 46 psychologists²¹⁵ into every existing PCN facility. Even if psychodynamic therapy is superior to CBT (although the literature demonstrates this not to be true) this is going out-of-scope of this Capstone. This Capstone is not meant to determine the most efficacious method of treatment, it is meant to determine the most promising economic and political case of investing in psychotherapy. CBT is much less costly, and much more politically feasible, than spending \$242 million and hiring 1,926 psychologists to deliver psychodynamic psychotherapy in Alberta.

The debate around which type of therapy is most efficacious continues, and this is a reason why treatment for mental health is not covered by the current healthcare system. Politicians and governments may be hesitant to invest in any mental health treatment, because not only will doing so be expensive, but also may be an investment in the wrong type of care. Governments would be heavily criticized if they invested millions of dollars into one type of mental health treatment program, and then such a type of care was later found to not be the most effective.

²¹⁴ USA 2012: 109,000 psychology majors / 1,791,000 total bachelor degrees conferred = 6.09% of graduates are psychology graduates (<https://nces.ed.gov/fastfacts/display.asp?id=37>); USA 2012 population: 314,102,623 (<http://www.census.gov/popclock/>); $1,791,000 / 314,102,623 = 0.0057$ bachelor's degrees per capita; 2012 Alberta population: 3,779,353 (<http://www.statcan.gc.ca/pub/12-581-x/2012000/pop-eng.htm#t01>); $0.0057 * 3,779,353 = 21,542$ bachelor's degrees conferred in Alberta annually; $21,542 * 6.09\% = 1,312$ psychology graduates in Alberta

²¹⁵ $1,926$ psychologists / 42 PCNs = 46 psychologists per PCN

5.2 Cost: politically unpalatable

Investing in psychotherapy is an expense, and similar to all government expenditures, investing in psychotherapy has been heavily scrutinized and ultimately overlooked by governments as ways to invest in healthcare. Compared to Scenarios 1, 2, and 3, Scenario 4's costs are simply too high to be politically feasible. It took economic arguments in both the U.K. and Australia to convince their governments that an investment in psychotherapy was a sound financial decision. From the inception of Canadian healthcare, more was known about physical ailments than mental illnesses, and so mental illness was largely excluded from healthcare investments. As research has progressed on mental illness, and the medical community knows more about how to treat such an illness, mental health has begun to attempt to find its place within Canadian Medicare. In Commonwealth nations, economic arguments are a successful means of convincing governments to fund mental health treatment.

6.0 Stakeholder Analysis

“Politics and health care do not mix well, yet they are inseparable in the Canadian universal health care system.”²¹⁶ After David Levine’s more than 40 years of healthcare experience, one of the key issues he found was that medical doctors must be consulted with and their support gained in order for any project to succeed. As outlined in this Section, it is important that relevant healthcare practitioners are consulted in order to gain their support, and for any implemented program to be met with greater success as it moves into the future.

This Capstone draws from case studies, and from the literature, that medical doctors, namely family physicians, want to help their mentally ill patients, but do not have the resources to be able to do so. The proposed scenarios give FPs the tools they need to provide mentally ill patients with the best care. In fact, this Strategy completely transfers family physicians’ responsibility for mentally ill patients to social workers, psychologists, and psychiatrists. It allows FPs to direct their patients to health practitioners that can offer the most appropriate type of treatment. FPs can still be as involved in the process as they wish, but these scenarios relieve a lot of time-consuming obligations, and allow FPs to do their job – namely diagnosing and treating physical illnesses, rather than providing talk therapy for mental illness. As David Levine illustrates, MDs are pivotal in the success or failure of this program, since they hold so much power within the healthcare arena.

Furthermore, another type of MD, the psychiatrists, should also be consulted. Psychiatrists will play a significant role in the operation of this Strategy. Their opinions should be sought regarding how best to integrate them into PCNs, whether physically or electronically. Regardless of how this Capstone believes medical doctors will react to the proposed investment in mental health, actual

²¹⁶ David Levine, “Health Care and Politics,” Vehicule Press, 2015.

consultations with family physicians, medical doctors, psychiatrists, and with the Alberta Medical Association must occur. Effective consultations may mean the difference between program failure and success.

Consultation should also take place amongst the social worker and psychologist community in Alberta, including the Health Sciences Association of Alberta (HSAA). Social workers and psychologists will play a large role in these scenarios, and their support will be required in order for any implemented program to be a success. Consultation with nurses must occur as well. This includes The Union of Healthcare Professionals, as well as the United Nurses of Alberta, which represent this other important stakeholder group. Nurses operating in PCN facilities will be affected by this strategy, more so than nurses working in centralized hospitals. A final union to consider consultation with is the Alberta Union of Provincial Employees (AUPE). These coalitions are so important, because as David Levine explains, coalitions of support from multiple stakeholders must be fostered in order for a program to be successful.

David Levine also speaks of the benefit that can be gained from finding ‘champions’ within the current system. These allies will support the cause that is being pitched, and Levine believes these ‘champions’ are of exceptional value. Determining and capitalizing on FPs, MDs, psychiatrists, psychologists, social workers, nurses, and senior management who will support this strategy only adds support to any initiative that is implemented.

6.1 Social Workers

While social workers have predominantly functioned outside the healthcare system, there is a continuing trend for social workers to be integrated into primary healthcare facilities.²¹⁷ The University of Maryland's Dr. Michael Lindsey, states, "We've [social workers] had a tendency to work myopically in our own world, even though social work skills lend very well to other disciplines."²¹⁸ Dr. Lindsey also explains how 'social workers are beginning to realize their potential in the public health arena.'²¹⁹

Furthermore, social workers are rarely acknowledged for their contributions to public health by healthcare professionals. Researchers Ruth and Sisco state, "It is a detriment to the social work field that we [social workers] think of ourselves as visitors to the field of public health. Public health should come to us for assistance in cultural responsiveness and community-based work because social workers are exceptionally good at these."²²⁰ Lastly, the National Association of Social Workers states, "Social workers are a natural fit in integrated primary care."²²¹ From this information, it can be expected that although social workers are not usually integrated into Alberta PCNs, their potential integration into PCNs will be beneficial and a 'natural fit'. Social workers possess skills that will complement those of other healthcare professionals.

²¹⁷ Jennifer Van Pelt, "Perfect Partners," *Social Work Today*, 9(1): 28, 2009, <http://www.socialworktoday.com/archive/011909p28.shtml>.

²¹⁸ Ibid.

²¹⁹ Ibid.

²²⁰ Ruth, Sisco, "Public health social work," *Encyclopedia of Social Work*, 2008.

²²¹ Stacy Collins, Suzanne Daub, "Social Work and Primary Care: A Natural Collaboration," *NASW*, May 23, 2012, http://socialworkers.org/ce/online/Resources/20125814415231_May%2023%202012%20Webinar%20Slides.pdf.

6.2 Psychologists

Dr. Suzanne Johnson, President of the American Psychological Association, states, “psychology must become a bigger player in integrated [health] care.”²²² She also explains how “Expanding psychology’s role in advancing health is one of three components of APA’s strategic plan.”²²³ Dr. Johnson discusses how properly trained psychologists have much to offer integrated care teams. She explains how one of the large problems with integrating psychologist into primary care facilities is that many doctors are actually unfamiliar with the skills psychologists possess, and how family physicians often prefer to turn patients towards more familiar and already integrated healthcare professionals – such as nurses. The second problem is that even if psychologists are integrated into interdisciplinary teams, many psychologists are not trained on how to properly function within these teams, which leads to more coordination issues. If psychologists are to be integrated into Alberta’s PCNs, then training would need to be provided to both medical doctors and psychologists, on how to complement one another’s skill sets, and how to work properly with one another in PCNs.

6.3 Family Physicians

Based on research publications,²²⁴ family physicians predominantly want greater access to mental health professionals, and see integrated care as a desirable objective. The major quality that family physicians wanted out of integrated care was increased access and communication amongst

²²² Dr. Suzanne Bennett Johnson, “Increasing psychology’s role in integrated care,” *American Psychological Association*, 43(2): 5, 2012, <http://www.apa.org/monitor/2012/03/pc.aspx>.

²²³ Ibid.

²²⁴ Clatney, MacDonald, Shah, “Mental health care in the primary care setting: Family physicians’ perspectives,” *Canadian Family Physician*, 54(6), pg 884-889, 2008; Craven, Cohen, Campbell, Williams, Kates, “Mental Health Practices of Ontario Family Physicians: A Study Using Qualitative Methodology,” *Canadian Journal of Psychiatry*, 42: 943-949, 1997; Brown, Lent, Stirling, Takhar, Bishop – “Caring for seriously mentally ill patients: qualitative study of family physicians’ experiences,” *Canadian Family Physician*, 48: 915-920, 2002; Cordeiro, Foroughe, Mastorakos, “Primary Mental Health Care in the Family Health Team Setting: Tracking Patient Care from Referral to Outcome,” *Canadian Journal of Community Mental Health*, Vol. 34, No. 3, 2015.

healthcare providers. When integrating social workers, psychologists, and psychiatrists into PCNs with family physicians, it is important to train all newly integrated professionals on how transparent and frequent communication and accessibility are both very important skill sets that will need to be present. Integration of professionals can be strengthened by further consultation with family physicians in Alberta.

6.4 Psychiatrists

Psychiatrists respond positively to their experiences of working in integrated models of interdisciplinary care.²²⁵ “Psychiatrists’ opinions and experiences working in integrated care were overwhelmingly positive.”²²⁶ The report explains how psychiatrists enjoyed working in a patient-centered model of care, working in an interdisciplinary team, the psychiatrists’ role as educator, the ability to reach more people in need of mental health treatment through a psychiatrist-supported approach in the collaborative care model, and opportunities for growth and innovation.²²⁷ Researchers also state that integrating psychiatrists into primary care facilities increases the number of patients that psychiatrists are able to treat.

However, the report also states various shortcomings of attempting to integrate such a program. Researcher Dr. Raney states, “The biggest hurdles are finding psychiatrists to do this [integrated] work and providing the training they need to feel competent in this work.”²²⁸ Researcher Dr. Norfleet further states, “One challenge we now face is training psychiatrists and behavioral health

²²⁵ Norfleet et al, “The Role of the Integrated Care Psychiatrist in Community Settings: A Survey of Psychiatrists’ Perspectives,” *Psychiatric Services*, 67(3): 346-349, 2016, <http://dx.doi.org/10.11796/appi.ps.201400592>.

²²⁶ Ibid.

²²⁷ Ibid.

²²⁸ Megan Brooks, “Psychiatrists Happy Practising Integrated Care,” *Medscape Medical News*, January 7, 2016, http://www.medscape.com/viewarticle/856902#vp_2.

professionals in how to most effectively provide care in this model.”²²⁹ When moving forward with the implementation of any integrated care models, it will be important to provide specialized training to the newly integrating psychiatrists. The issue of finding new psychiatrists is less of an issue, since costs of compensating newly integrating psychiatrists has been included in the cost estimates of implementing such a shared-care program.

6.5 Nurses

As earlier explained in the Simon Fraser area case study in Section 4.1(1), nurses’ enthusiasm with the integrated program grew as the project proceeded.²³⁰ Drawing from the world-renowned American Geisinger Health System, it is also important to continually consult with nurses and nurses’ unions when delivering healthcare to citizens. The Geisinger Health System, located in Pennsylvania, is a world-leading institution in the delivery of quality patient care along with excellence in nursing practice and innovation. “Geisinger’s Vice President (Nursing), Dr. Terri Bickert, confirms there is a close working relationship with the Pennsylvania State Nurses Association.”²³¹ Dr. Bickert explains how part of the reason that Geisinger has been so innovative is because nurses are involved in all aspects of care. Geisinger’s current CEO is also “committed to having nurses influence key organizational decisions from ward level to board [level].”²³² When implementing any shared care type of healthcare model, it will be important not to underestimate the importance of nurses in the potential success of the program. They must be consulted with at all levels of organizational decision-making.

²²⁹ Megan Brooks, “Psychiatrists Happy Practising Integrated Care,” *Medscape Medical News*, January 7, 2016, http://www.medscape.com/viewarticle/856902#vp_2.

²³⁰ Isomura, Senay, Haldin, Edworthy, “Bridging with primary care: A shared-care mental health pilot project,” *BC Medical Journal*, Vol. 44, No. 8, pg 412-414, 2002.

²³¹ The nursing role in integrated care models, Royal College of Nursing, page 6, May 2014, https://www2.rcn.org.uk/_data/assets/pdf_file/0009/581346/02.14_The_nursing_role_in_integrated_care_models_Reflecting_on_the_United_States_experience.pdf.

²³² Ibid.

Kaiser Permanente, another world-leading healthcare program, focuses on “creating and developing a working environment in which nurses excel in patient care, education, leadership, research and community services.”²³³ By studying world-class healthcare delivery programs, it becomes evident that nurses are a key determinant of the success of a program.

6.6 Unions and Representing Organizations

The Health Sciences Association of Alberta (HSAA) represents Alberta’s social workers and psychologists. The Alberta Union of Provincial Employees (AUPE), and the United Nurses of Alberta (UNA), represent the province’s various types of nurses. The Alberta Medical Association (AMA) is an advocate for Alberta’s medical doctors and provides leadership and support to these professionals. The AMA represents both psychiatrists and family physicians. Unions and organizations representing the above professionals must be consulted with during major changes to each respective profession, for both legal reasons as well as ease of transition. Legalities of such consultation are governed under Section 15 of the Federal Employment Equity Act. The faster Alberta Health Services consults with the relevant unions, the faster implementation will occur. This will also lead to less problems that may arise in the future.

²³³ Ibid.

7.0 Policy Applications

7.1 Framework of Analysis: Dunning Funnel, ROI, Cost-savings, and Ease of Implementation

7.1(1) Dunning Funnel

The Dunning Funnel is a tool meant to be used in the healthcare field to determine whether or not some program qualifies for public-financing. It was a product of the 1990 Netherlands' Committee on Choices in Health Care.²³⁴ The Committee needed to ensure that all medically necessary services could be readily provided, and so decided that non-essential services would need to be cut from public-financing. The following four components comprise the Dunning Funnel:

1. Necessity: does the illness in question restrict the functioning of the patient?
2. Effectiveness: is the treatment method in question confirmed and documented as being successful?
3. Efficiency: does the treatment method in question lead to favorable returns on investment?
4. Individual payment: can the treatment in question be left to individual payment?

The Committee “described these principles as forming a sieve for sifting out services that should not be publicly funded.”²³⁵ While the Dunning Funnel is a systematic means of determining whether or not some service should be provided by the public-payer, it has been criticized by policy makers concerned it would be overcome by political concerns and media pressures. The Funnel was determined by policy makers to fall short in terms of removing services from the already publicly-covered package.²³⁶ Adding services to the list of publicly-financed services may be contentious as well.

²³⁴ Sabik, Lie, “Priority setting in health care: Lessons from the experiences of eight countries,” *International Journal for Equity in Health*, 7: 4, 2008, doi: 10.1186/1475-9276-7-7.

²³⁵ Ibid.

²³⁶ Ibid.

Despite the shortcomings of the the Funnel, the Dunning Funnel is relevant to evaluating the Scenarios recommended by the Capstone researcher because it rationally determines whether or not some medical service should be publicly-financed. This aspect plays an important role in evaluating policy alternatives.

Based on a review of relevant literature, components one and two (necessity and effectiveness) are found to be met. The researcher's calculations outlined in Section 4 prove the efficiency component is met. Lastly, researching patients' ability to pay for psychological services demonstrates that the treatment in question cannot be left to the individual.

Components 1, 2, and 3: Necessity, Effectiveness, and Efficiency

The American Psychiatric Association, National Alliance on Mental Illness, and countless other organizations all state that mental illness impairs and restricts daily functioning of the patient. CBT is a necessary treatment for mentally ill patients. The literature illustrates that CBT and psychotherapy are effective methods of treatment.²³⁷ This type of treatment has been documented and confirmed as being successful. Section 4 demonstrates how investing in CBT should theoretically lead to favorable returns on investment. Substantial avoided direct healthcare costs will be realized by publicly-financing CBT. Myhr & Payne also demonstrates that investing in CBT is economically beneficial and efficient.

²³⁷ Norton, Price, "A Meta-Analytic Review of Adult Cognitive-Behavioral Treatment Outcomes Across the Anxiety Disorders," *The Journal of Nervous and Mental Disease*, 2007, <http://ebbp.org/resources/NortonPrice.pdf>; Dobson KS, "A meta-analysis of the efficacy of cognitive therapy for depression," *Journal of Consulting and Clinical Psychology*, 1989; Beck, Fernandez, "Cognitive Behavioral Therapy in the Treatment of Anger: A Meta-Analysis," *Cognitive Therapy and Research*, 1998.

Component 4: Individual Payment

The final component of the Dunning Funnel is less clear than the first three. The Capstone researcher's three scenarios presented in Section 4 offer services covered by the taxpayer that would otherwise need to be paid for out-of-pocket by the patient. iCBT sessions could be purchased by the patient for \$60.²³⁸ However, this cost does not include clinician support with the software. The patient is responsible for arranging for a clinician to support them. Not only may this be difficult for the patient to arrange, but also would be more costly and would add more expenses to the initial \$60 price tag. Individual psychotherapy sessions, as mentioned prior in this document, typically cost around \$125 to \$175, but also often cost over \$200 per session.²³⁹ While the \$60 price tag must only be paid once, psychotherapy sessions are ongoing. Taking the Capstone researcher's calculated average non-SMI patient usage of 3.72 sessions and assuming a cost of \$150 per session, patients can expect to pay \$558 for sufficient face-to-face CBT.²⁴⁰ If an SMI patient requires more sessions than 6.3, which they likely would, these patients would be expected to pay \$2,400 for 16 sessions.²⁴¹

According to the Credit Counselling Society, 3 per cent of an individual's or household's income should be spent on medical expenses.²⁴² \$1,974 is the annual average that Canadian households spend on medical expenses.²⁴³ Taking the 3 per cent value into consideration, then \$65,793²⁴⁴ would be the amount that families need in order to cover their annual medical expenses. This

²³⁸ Internet-delivered Cognitive Behaviour Therapy, THIS WAY UP, <https://thiswayup.org.au/how-we-can-help/internet-delivered-cognitive-behaviour-therapy/>;

²³⁹ Psychotherapy Fees, Therapy Toronto, <http://therapytoronto.ca/fees.phtml>.

²⁴⁰ \$150 per session * 3.72 sessions = \$558 total for CBT treatments for non-SMI patients

²⁴¹ \$150 per session * 16 sessions = \$2,400 total for CBT treatments for SMI patients

²⁴² How Much Money You Should Spend on Living Expenses – Budgeting Guidelines for Income, Credit Counselling Society, <http://www.nomoredebts.org/budgeting-guidelines>.

²⁴³ averaging 2009 average medical expenses by quintile: Q1 (\$1,030), Q2 (\$1,644), Q3 (\$1,973), Q4 (\$2,258), Q5 (\$2,964) = \$1974; Table 1 Average household out-of-pocket expenditures on health care, Statistics Canada, <http://www.statcan.gc.ca/pub/82-003-x/2014004/article/11924/tbl/tbl1-eng.htm>.

²⁴⁴ \$65,793 * 3% = \$1,974

amount compares closely with the reported Canadian household’s average income from the same year of \$68,410.²⁴⁵ The following table determines the additional income that household’s would require to afford additional mental health expenses:

Table 16: Calculating Total Household Income Threshold Rates to Qualify for Government Assistance

[1]	[2]	[3]	[4]
	Cost (\$)	Total additional annual income (\$ to qualify spending Cost from [2])	Gov’t assistance cut-off rates (\$)
iCBT software	60	2,000 (2000 * 3% = 60)	67,793 (65,793 + 2,000)
Non-SMI face-to-face CBT (3.7 sessions @ \$150/session)	558	18,600 (18,600 * 3% = 558)	84,393 (65,793 + 18,600)
SMI face-to-face CBT (16 sessions @ \$150/session)	2,400	80,000 (80,000 * 3% = 2,400)	145,793 (65,793 + 80,000)

Using the values calculated in Column [4] of Table 16, it is found that if a household’s annual income is less than \$67,793, then that household would qualify for some level of government assistance in the purchasing of one iCBT software package. It should be noted that this is a conservative estimate of an income threshold, since in order to be effective, iCBT software would need to be supplemented with clinician support. This clinician support would involve costs over and above the initial \$60 price tag. The \$67,793 threshold would assume that Scenario 1 or Scenario 3 were implemented. Likewise, a household with an income of less than \$84,393 would qualify for some level of government assistance if someone in that household required face-to-face CBT for a non-SMI patient (3.72 sessions). This would assume that either Scenario 2 or Scenario 3 were implemented. If a household’s annual income were less than \$145,793, then that household would qualify for some level of government assistance if a member of that household required face-to-face CBT for an SMI patient (16 sessions). This assumes Scenario 2 or Scenario 3 were implemented.

²⁴⁵ Median total income, by family type, by province and territory, Statistics Canada, <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/famil108a-eng.htm>.

A sliding scale of government assistance for mental healthcare would need to be determined. For example, households with a very small amount of annual income, such as less than \$20,000, may qualify for 100 per cent government coverage. As household income increases, government assistance decreases. Households earning wages close to the \$67,793 cutoff, yet still below, would qualify for a small amount of government coverage. This small amount may, for example, be closer to a figure such as 10 per cent or 20 per cent government assistance.

Making psychotherapy more affordable is important, because research shows that the cost of psychotherapy is the largest barrier to access.²⁴⁶ Mohr Ho Duffecy et al. find that cost was a deterrent to 24.6 per cent of those surveyed: the largest barrier to access of all options. Cost to psychotherapy was a larger barrier to access than each of: stigma, lack of motivation, emotional concerns, negative evaluations of therapy, improper fit of therapy to needs, time constraints, participation restriction, and availability of services. However, this is not greatly supported by a report by CIHI, which states that 12 per cent of those with a mental illness were deterred by the cost, and was preceded by the patient wanting to deal with their issue themselves (34 per cent), as well as patients reporting “they did not get around to getting help” (20 per cent).²⁴⁷ Even though cost was listed by CIHI as the third largest barrier to access, it was the largest barrier of access that can still be addressed by government. Persuading people to seek psychological support from therapists, rather than having them deal with it on their own, would be a difficult task and may not be possible for government to address successfully. It may also be paternalistic. Additionally, addressing the issue of people simply ‘not getting around to it [psychotherapy]’ would also be a difficult issue to solve, if even possible.

²⁴⁶ Mohr, Ho, Duffecy, et al. “Perceived Barriers to Psychological Treatments and Their Relationship to Depression,” *Journal of Clinical Psychology*, 66(4): 394-409, 2010, doi: 10.1002/jclp.20659.

²⁴⁷ Exploring the 70/30 Split: How Canada’s Health Care System is Financed, CIHI, 2005, https://secure.cihi.ca/free_products/FundRep_EN.pdf.

Lastly, private insurance may play a role in government assistance. As stated earlier in this report, between 47 and 72 per cent of Canadians have some form of government insurance or private insurance coverage for mental health services accessed.²⁴⁸ Specifically, 61 to 72 per cent of patients said they had their consultation with a psychologist, nurse, social worker, or counsellor either fully or partially covered. 47 per cent of those who consulted with “other professionals” had at least some coverage.²⁴⁹ This lower 47 per cent is not surprising, however, since these ‘other professionals’ included acupuncturists, chiropractors, herbalists, hypnotists, and other alternative professionals. An additional means of reducing the multi-million dollar expenditures laid out in this Capstone’s three scenarios is to cover costs that arise from gaps in insurance. Since 61 to 72 per cent of patients already have some form of coverage, then government assistance could be provided to the remaining 28 to 39 per cent of patients with no coverage. Additionally, for the 61 to 72 per cent with varying degrees of coverage of care, the government could top-up their coverage and cover those costs that are not addressed through insurance.

While this strategy would reduce government expenditures, it also presents issues with coverage by insurance companies: why would insurance companies continue to offer their coverage to patients, when eliminating this coverage simply shifts costs to the government, and away from the insurance company? If Person A is not covered by insurance, then they will be covered by the government, whereas Person B who does have insurance will not receive any government coverage because their treatment will all be covered through the individual’s insurance. Insurance companies may begin to limit their coverage for mental health services in Alberta, because doing so

²⁴⁸ Ibid.

²⁴⁹ Ibid.

will shift their costs onto the provincial government, and the patient will still be adequately covered.

7.1(2) ROI and Cost-savings

Return on investment and cost-savings are the pieces to the second framework for analysis used in determining the recommended course of action. Scenario 3 is superior to Scenario 1 and is (narrowly) superior to Scenario 2, in terms of ROI values. Scenario 3 is superior to Scenario 1 in terms of cost-savings dollar amounts, and is identical to Scenario 2 in terms of cost-savings. The greatest financial reward can be achieved by implementing a two-tiered system, and realizing the benefits of treating non-SMI patients with iCBT and social workers, and SMI patients with psychologists and face-to-face CBT. Despite this, Section 7.2 offers an analysis of why Scenario 2 is recommended over Scenario 3.

7.1(2) Ease of Implementation

Nwankwo and Apeh 2008 state the most important step in the policy process is within its implementation stage.²⁵⁰ The implementation stage of the public policy process is an important part of any public policy analysis. For this reason, the potential ease of implementation is also considered by the Capstone's researcher, when making the final recommendation.

7.2 Evaluation of Policy Alternatives

Scenario 2 has been chosen as the recommended program to pursue. Scenario 2 offers strong returns on investment. It enjoys a more straightforward implementation as it forgoes the \$2 million cost-savings accrued from treating non-SMI patients with iCBT. Rather, it treats all patients with face-to-face therapy. Although these \$2 million savings are forgone, the Capstone researcher concludes that this \$2 million is not worth the added complexity that will accompany it. Simply put,

²⁵⁰ Nwankwo, Apeh, "Development Administration: Principles and Practise," *Enugu: Zik Chuks Publishers*, 2008.

a slightly more expensive Scenario 2 will be simpler to implement than Scenario 3, and will have a greater chance of achieving success. Furthermore, there will be less pushback to Scenario 2, since all mentally-ill patients will qualify for face-to-face therapy: no patient will be allocated to iCBT when that patient would rather have face-to-face therapy.

Even though Scenario 2 is relatively simpler, it should first be implemented as a scaled-down pilot project, so that implementers are able to better handle the different components of putting such a project in place. It is recommended that Scenario 2 be scaled down to the scope of one PCN, rather than the province's current 42. All components can stay the same (psychologists treating all patients, psychiatrists working with multi-disciplinary teams, expanding PCN facilities, and engaging and managing the media) but should be scaled down so the project is more manageable for implementers. During the review stage (Section 7.5), the successes and failures of the project can be identified, so that any mistakes are not made on a larger scale. From this point, the government can determine whether or not implementing Scenario 2 on a province-wide level would be promising or problematic.

Scenario 1 was not chosen as the recommended course of action, mainly because it does not benefit the province's SMI patients. This is problematic because SMI patients account for the majority of excess costs to the healthcare system. Scenario 1 does not get to the root of the problem. One advantage to Scenario 1 is the simplicity of the model. Only iCBT will be offered, which makes this Scenario more straightforward in its implementation. However, the researcher believes this positive aspect, along with its less expensive price tag, does not make up for its lack of addressing the province's SMI patient population.

Scenario 3 is not recommended because it is the most complex of the three scenarios, yet does not add much to ROI shown by the more straightforward Scenario 2. It is almost \$2 million less than Scenario 2, and therefore leads to slightly more favorable returns on investment. Unlike Scenarios 1 and 2, Scenario 3 would be more complicated to implement. The researcher believes this more complex implementation is not worth the \$2 million that Scenario 3 would save.

The final option that is not being recommended is to maintain the status quo. Doing so would be the most politically palatable, and would be the easiest 'sell' to Alberta's taxpayers. However, the Capstone researcher has illustrated how maintaining the status quo will continue to cost the province billions of dollars on a yearly basis. Implementing Scenario 2 will open up the possibility for hundreds of millions of dollars to be saved and then spent in other areas of the province. The researcher believes the potential for such cost-savings are worth the risk of implementation failure.

Finally, the Dunning Funnel has been used as an added test to determine whether or not Scenario 2 should be publicly-financed. Through Section 4's economic analysis, enough information has been gathered in order to determine that all components of the Dunning Funnel would be met by offering publicly-financed psychotherapy to Albertans. Although all Scenarios could potentially meet the four requirements of the Dunning Funnel, Scenario 2 and 3 most strongly meet the efficiency component. Technically, Scenario 3 has this added advantage over Scenarios 1 and 2. However, the small drawbacks that Scenario 2 has in regards to ROI and cost-savings (as compared to Scenario 3), pale in comparison to the more straightforward implementation that is inherent in Scenario 2.

7.3 Legislation/Legal Changes

7.3(1) Health Professions' Act (HPA)

The Health Professions' Act regulates the scope of practice of all medical professionals in Alberta.

Psychologists are regulated under Schedule 22 of the HPA. They are mostly sufficiently covered by the HPA:

- (a) Assess, diagnose, treat, guide and support persons or groups of persons in order to enhance development, effective living and quality of life or to prevent, remedy or ameliorate mental, emotional, cognitive, behavioural and interpersonal difficulties²⁵¹

Consider adding the following to the psychologists' 'Practice' section: work within multi-disciplinary care teams and in primary care settings to further treat patients suffering from serious cases of mental illness.

Family physicians are adequately covered under Schedule 21 of the HPA:

- (a) Assess the physical, mental and psychosocial condition of individuals to establish a diagnosis,
- (b) Assist individuals to make informed choices about medical and surgical treatments²⁵²

Consider adding the following clause to the 'Practices' section: refer mentally ill patients to appropriate level of integrated care, including social workers for mild to moderate cases of mental illness, psychologists for serious cases of mental illness, and psychiatrists where medication would be beneficial.

Since psychiatrists are medical doctors, they are also covered under Schedule 21 of the HPA.

Consider adding the following clause to the 'Practices' section of Schedule 21: an appropriate number of psychiatrists (105) will be integrated into Alberta's PCNs, where these psychiatrists will work to treat those cases of mentally ill patients referred to them by any member of the multi-disciplinary PCN team.

²⁵¹ Health Professions Act, RSA 2000 Chapter H-7, May 27, 2016, <http://www.qp.alberta.ca/documents/Acts/h07.pdf>.

²⁵² Ibid.

Nurses' duties are outlined under Schedule 10 of the HPA. They are mainly covered through the following clauses:

- (a) Apply nursing knowledge, skills and judgment to assess patients' needs
- (b) Provide nursing care for patients and families²⁵³

Similar to the other healthcare professions, consider adding the following clause to the 'Practices' section of Schedule 10: work with other multi-disciplinary healthcare professionals to appropriately refer patients to psychologists, family physicians, or psychiatrists within an existing PCN.

7.3(2) Alberta Health Care Insurance Act (AHCIA)

The Alberta Health Care Insurance Act (AHCIA) provides benefits for basic health services to all residents of Alberta.²⁵⁴ Basic health services are defined as:

- All services provided by physicians and that are medically required
- Oral and maxillofacial surgeries
- Optometric services
- Chiropractic services
- Services provided by a podiatrist²⁵⁵

Frontline treatment for mental illness involves psychotherapy and is provided by a psychologist. Psychologists treat all cases of mental illness. Access to a psychologist, and therefore psychotherapy, are not covered under the AHCIA. Therefore, the AHCIA does not cover any type of talk therapy treatment for mental illness. Patients must personally pay for psychotherapy.

²⁵³ Ibid.

²⁵⁴ Alberta Health Care Insurance Act, RSA 2000, c A-20, (3)(1)

²⁵⁵ Ibid, (1)(b)(i-vi), (2)

However, psychiatrists are medical doctors, and therefore their services are covered by the AHCIA. While it is publicly-covered to receive a medication prescription, it is not publicly-covered to receive talk therapy.

Arguing that psychotherapy falls within the AHCIA's purpose:

Section (4)(1) of the AHCIA states: subject to this Act and the regulations, the Minister shall pay benefits in respect of health services provided to residents.²⁵⁶ This can be interpreted as meaning the purpose of the AHCIA is to provide coverage for health services that are utilized by residents of Alberta. The World Health Organization defines health as being: "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."²⁵⁷ The interpretation can be made that the AHCIA is meant to cover treatment for those that are physically ill as well as mentally ill. Concluding this, psychotherapy should be covered under the AHCIA.

How psychotherapy will be included in the AHCIA:

The next issue that emerges is how to change the AHCIA so that psychotherapy fits within the AHCIA's framework. The best section for psychotherapy to fit within the AHCIA is under Section (1)(b)(vi) which states that services classified as basic health services by the regulations are covered under the AHCIA.²⁵⁸ The current regulations explain other basic health services that are covered, including chiropractic, optometric, oral surgery, and podiatric services.²⁵⁹

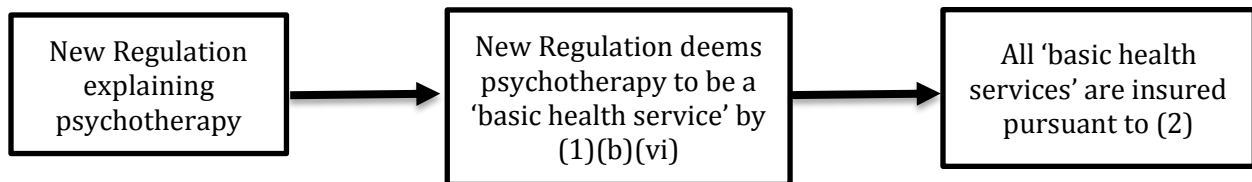
²⁵⁶ Alberta Health Care Insurance Act, RSA 2000, c A-20, (4)(1)

²⁵⁷ WHO Definition of Health, World Health Organization, last modified 2015, <http://www.who.int/about/definition/en/print.html>

²⁵⁸ Alberta Health Care Insurance Act, RSA 2000, c A-20, (1)(b)(vi)

²⁵⁹ These services are explained in the Chiropractic Benefits Repeal Regulation, Optometric Benefits Regulation, Oral and Maxillofacial Surgery Benefits Regulation, Podiatric Benefits Regulation, and Podiatric Surgery Benefits Regulation, respectively.

New regulations will need to be made that outline psychotherapy and the details of how it is to be covered. This must include how psychological care provided in PCN facilities by both psychologists will be publicly-financed by the Alberta Provincial Government. In doing so, these new regulations will then be included under Section (1)(b)(vi). This will deem psychotherapy to be considered a basic health service. Section (2) of the AHCIA states that any basic health service will then be insured services for the purposes of the AHCIA. The following diagram provides a summary:



It is important to note that within the AHCIA's regulations, the distinction must be made between psychological care provided in PCNs and psychological care provided in private clinics and by community organizations. Psychologists operating in PCNs will have their services publicly-financed, while psychologists operating in private clinics will need to be paid for by patients themselves. Patients will need to pay for private services through out-of-pocket payments or through private insurance.

7.3(3) Canada Health Act (CHA)

In order to have psychotherapy covered by the public-payer and for Alberta to continue to receive the Canada Health Transfer payments, the Canada Health Act must allow psychological service coverage by the province. The current comprehensiveness clause explains how “the health care insurance plan of a province must insure all insured health services provided by hospitals, medical practitioners or dentists, and where the law of the province so permits, similar or additional services rendered by other health care practitioners.”²⁶⁰ It is ultimately the responsibility of the

²⁶⁰ Canada Health Act, RSC 1985, c C-6, <https://releve.canlii.org/en/ca/laws/stat/rsc-1985-c-c-6/latest/rsc-1985-c-c-6.html#sec9>.

province to determine which services will be publicly-covered, and the CHA makes this possible by the above clause outlined in its comprehensiveness requirement. As discussed in Section 2.2(7), the Auton Case demonstrates how the current CHA does not guarantee coverage of psychological services. In order to do this, changes to the CHA would be required, but this would venture out-of-scope of this Capstone. The reason for this is because changing the CHA in such a way would mean psychotherapy would be covered in every province and territory in Canada. Such a change would require national collaboration amongst the provinces.

7.4 Policy Communications

The costs for the proposed scenarios were estimated with the inclusion of a Director of Communications. David Levine notes that a strong communications strategy, and effective communications with the media, must both be evident in order for a healthcare policy to succeed. Communications endeavors may include everything from notifications in PCN clinics' screens in waiting rooms, to notifications in doctors' exam rooms, to social media engagement, to televised advertisements. Notifications in PCN waiting rooms and doctors' exam rooms will be effective for targeting patients already using FPs for talk therapy. Social media, particularly Twitter, is an effective way to engage with local media.²⁶¹ Televised advertisements and billboards can be used to notify the general public of the new initiative.

A heavy emphasis should be placed on communicating with media and journalists. The media is a low-cost and effective way of notifying the public of an event or issue, but it is also potentially a very damaging form of notification. The Director of Communications will be tasked with effectively managing media attention, as this will have a drastic impact on public perception of the chosen scenario, and therefore success or failure of the program.

²⁶¹ Taras, "Communicating Policy," *The School of Public Policy – University of Calgary*, Calgary, AB, May 2016.

7.5 Policy Implementations

Implementation of any scenario cannot take place until proper consultation has occurred with affected healthcare professionals. The following is an outline of proposed next steps if a scenario is chosen for formulation and implementation:

Table 17: Implementation Timeline (for either pilot-project or scaled-up project)

Task	Start Date	End Date
Consultations with MDs (FPs and psychiatrists), psychologists, nurses, and unions	June 1, 2017	ongoing
Expansion of existing PCN facilities	September 1, 2017	January 31, 2018
Recruitment of Psychologists, Psychiatrists, and Senior Management	November 1, 2017	March 31, 2018
First face-to-face treatments begin	June 1, 2018	--
6 month progress evaluations (patient progression)	November 15, 2018	December 15, 2018
1 year review of implementation	June 1, 2019	July 31, 2019
Determination of success and shortcomings of program	August 1, 2019	August 31, 2019

A key takeaway from Section 4.1(1) of this Capstone, the Evaluation Report done by the Winnipeg Health Region, is that the evaluation stage is very important for improved program success and continuation. This Capstone recommends an evaluation procedure that utilizes several methodologies, both qualitative and quantitative, and that respects the time constraints that healthcare professionals and patients experience. Similar to the Winnipeg Health Region's Evaluation Report, any implemented scenario's evaluation should encompass surveys, focus groups, and data analysis of service delivery data. Service delivery data can include numbers of patients treated, average number of sessions attended, as well as regional volume depending on location of PCNs. This may lead to effective reallocation of resources from PCNs that are experiencing low volume, to PCNs that are experiencing a high volume of demand.

8.0 Recommendations and Conclusions

8.1 Recommendations

Upon the completion of this Capstone, the researcher has drawn the following thought processes. First, the issue was identified: untreated mental illness costs the Alberta healthcare system billions of dollars in excess costs. Second, the most promising method of alleviating this issue was investigated: CBT was chosen as the most likely method of treatment to succeed. Third, the optimal means of providing CBT was researched: studies show that integrating CBT into primary care facilities led to the strongest uptake and recovery rates. Fourth, case studies of Canadian integrated mental health programs were analyzed in order to determine what succeeded and what failed. This, coupled with the findings that FPs want greater access to mental health resources, reinforced the idea that integrating mental health care into PCN facilities was the most promising course of action. Fifth, upon determining the problem and how best to solve the problem, costs and cost-savings were determined for various scenarios. Each scenario represented a unique way of delivering PCN-integrated CBT. Upon conducting the economic analysis, the Dunning Funnel, ROI and cost-savings estimates, as well as ease of project implementation were used to choose one recommendation from four alternatives: Scenario 2 was the chosen recommendation.

Finally, the following is a list of recommendations during implementation, influenced by David Levine's 40 years of healthcare experience:

1. Establish a winner/find the 'middle ground': implement Scenario 2, first as a scaled-down pilot project - select one PCN to undergo the initiative
2. Consult all affected healthcare professionals: they will provide valuable feedback and insight into how to implement the program

3. Director of Communications: ensure the media is successfully navigated and managed
4. Find allies to champion the cause: allies may be within the system (healthcare professionals) or outside the system (community organizations)
5. Consider eventual fund reallocation from other areas of Alberta Health Services: for example, in time, money can be redirected from the Emergency Department to Scenario 2 operations

8.2 Conclusions

Scenario 2 should be pursued, and eventually fully scaled-up based on the pilot project. The cost-savings that will accrue to the Alberta healthcare system are very favorable, because Scenario 2 gets to the root of the problem: healing the most mentally ill patients before they are admitted to more expensive acute care facilities, while also treating the more numerous non-SMI patients. This proposed project is supported through research and case studies, and has been successfully implemented in other Commonwealth nations. Scenario 2's ease of implementation is also an important reason it has been chosen as the recommended Scenario.

The money saved through treating mental illness in a preventative manner represents hundreds of millions of dollars for Alberta, and these funds could be reallocated from current departments to wherever resources are needed the most. Cost-savings accrued from any scaled-down pilot project can be used to numerically prove the model is a success, therefore laying the foundation for the project to soon be scaled-up across the province.

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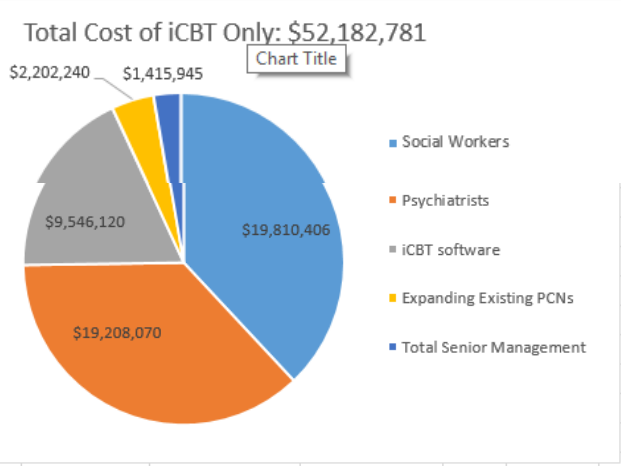
10.0 Appendices

10.1 Appendix A: Psychotherapy Coverage in Canada, by Province

Appendix A: Psychotherapy Coverage in Canada, by Province			
	Private or public?	Source	Additional services
British Columbia	Private	http://www.psychologists.bc.ca/faq/who-pays-services-registered-psychologist	Short-term community counselling services for reduced fees
Alberta	Private	http://www.health.alberta.ca/AHCIP/what-is-covered.html	AHS provides free short-term counselling
Saskatchewan	private	http://www.economy.gov.sk.ca/immigration/health-card	Short-term community counselling services for reduced fees; free group sessions
Manitoba	private	http://www.gov.mb.ca/health/mlsisp/#Q6	Community programs
Ontario	private	http://settlement.org/ontario/health/mental-health-and-addiction/basics/where-can-i-get-help-with-my-mental-health/	Community programs with sliding fees
Quebec	private	http://www.ranq.gouv.qc.ca/en/citizens/health-insurance/healthcare/Pages/medical-services.aspx	Sliding fees; free intern sessions
New Brunswick	private	http://www.ottesonpsych.com/faq.html	Sliding fees
Nova Scotia	private	http://www.halifaxpsychologist.com/nova-scotia-psychologists-faq.html	\$200,000 for NFP mental health providers
P.E.I.	private	http://www.gov.pe.ca/photos/original/hss_hms_ins_pei.pdf	Island Help Line
Nfld & Lbdr	private	http://mynh.ca/how-to-find-a-psychologist-cpa/	Community Addiction Prevention and Mental Health Promotion Grants Program (\$140,000)

10.2 Appendix B: Costs

1	Appendix B (1 of 3)				
2	Psychologists	Median Wage/hour (1)	Hours/week	Annual Salary	total number of psychologists required to treat AB
3	\$ -	\$ 51.23	37.5	\$ 96,056	\$ -
4					
5	use average between 1 psych/6250 residents and 1 psych/9000 residents = 1 psych / 7625 residents				
6	4.2 M / 7625 (1 psych per 7625 ppl) = 551 psychologists (if only face-to-face CBT)				
7	Alberta has 42 PCNs (551 psychologists/42 PCNs = 13.1 psychologists/PCN)				
8	Psychologists treat 7 people/day (2)				
9	7 session*551 psychologists = 3857 people treated per day				
10	3857 people per day*5 days per week = 19285 people treated per week				
11					
12	calculation of # of required psychologists: support-clinicians are 2.079x more productive than f2f				
13	patients treated per year through face-to-face psychologists			159101.25	2.079245283
14	divided by 4 cycles per year			/4	
15	equals total patients treated in every 3 month module			39775.3125	patients treated per week
16	divided by 150 (each support-psychologist can treat 150 pati			/150	
17	equals total number of support-clinicians required to treat			265.16875	
18	the same amount of patients as the IAPT program				
19					
20	Social Workers	Median Wage/hr (11)	hours/week	annual salary	total number of social workers required
21	\$19,810,406	\$39.87	37.5	\$74,756.25	265
22					
23	Psychiatrists	half-days care per	full-days care per wk	# of FT psychiatrists req'd	psychiatrist wage (4)
24	\$ 19,208,070	210	105	105	\$182,934.00
25					
26	iCBT software	patients requiring	cost per patient (5)		
27	\$ 9,546,120	159102	\$60.00		
28					
29	Assumptions				
30	Expanding Existing PCNs	Cost/square foot	Total for one 48 square foot room (6)	Specifications	
31	\$2,202,240	\$124	\$5,952	6'x8' (comparable to Calgary Counselling Centre)	carpenter: \$70/hr
32	42 PCNs expanded (370 new offices)			foundation	insulated/finished walls
33				vinyl siding	carpet
34				roofing	windows
35	Director of Operations - Alberta	(7)			
36	\$ 318,774	(oversees population of 4.2 M)			
37					
38	Regional Operations - North Zone	(8)			
39	\$130,000	population 500,000			
40	Regional Operations - Edmonton Zone				
41	\$170,000	population 1,300,000			
42	Regional Operations - Central Zone				
43	\$130,000	population 500,000			
44	Regional Operations - Calgary Zone				
45	\$190,000	population 1,600,000			
46	Regional Operations - South Zone				
47	\$110,000	population 300,000			
48					
49	Director of Communications	(9)			
50	\$210,850				
51	Medical Consultant (liaison with MD)	(10)			
52	\$156,321				
53					



54	Total Senior Management								
55	\$1,415,945								
56									
57	Total Cost of Pilot Project	Cost/patient:							
58	\$52,182,781.25	\$	327.99						
59									
60	Endnotes								
61	(1)	Alberta Government							
62		https://occinfo.alis.alberta.ca/occinfopreview/info/browse-occupations/occupation-profile.html?id=71002221							
63	(2)	Dr. John Grohol							
64		http://psychcentral.com/lib/your-first-psychotherapy-session/							
65	(3)	Perini Titov Andrews 2009; Stott Wild Grey et al. 2013							
66	(4)	http://www.payscale.com/research/CA/Job=Psychiatrist/Salary							
67	(5)	https://thiswayup.org.au/how-we-can-help/courses/depression/							
68	(6)	http://www.fixr.com/costs/add-new-space							
69	(7)	salary matched to AHS Senior Provincial Medical Advisor (class: Executive Manager II)							
70		http://www.alberta.ca/salarydisclosure.cfm							
71	(8)	salary based off AHS Chief Delivery Officer (class: Executive Manager I)							
72		http://www.alberta.ca/salarydisclosure.cfm							
73	(9)	salary matched to Senior Official position							
74		http://www.alberta.ca/salarydisclosure.cfm							
75	(10)	salary matched to Medical Consultant position							
76		http://www.alberta.ca/salarydisclosure.cfm							

1	Appendix B (2 of 3)								
2	Psychologists	Median Wage/hour (1)	Hours/week	Annual Salary	551 psychologists required	A	19285		
3	\$ 52,926,994	\$ 51.23	37.5	\$ 96,056	\$52,926,993.75	B	19285		
4						C	19285		
5						D	19285		
6	use average between 1 psych/6250 residents and 1 psych/9000 residents = 1 psych / 7625 residents					E	19285		
7	4.2 M / 7625 (1 psych per 7625 ppl) = 551 psychologists (if only face-to-face CBT)					F	19285		
8	Alberta has 42 PCNs (551 psychologists/42 PCNs = 13.1 psychologists/PCN)					G	19285		
9	Psychologists treat 7 people/day (2)					H	19285		
10	7 session*551 psychologists = 3857 people treated per day					0.25I	4821.25		
11	3857 people per day*5 days per week = 19285 people treated per week						159101.3		
12	159,101 patients treated per year								
13								Cost	% of total costs
14	non-SMI	8995	125732.11	less patients are treated per cycle, but more cycles occur per year				\$ 24,686,392.00	46.64247
15	SMI	10290	33442.5	more patients are treated per cycle, but less cycles occur per year				\$ 28,240,464.00	53.35753
16	TOTAL	551	159174.61	total patients treated				\$ 52,926,856.00	
17									
18									
19	Social Workers	Median Wage/hr (11)	hours/week	annual salary	total number of social workers required				
20	\$0.00	\$39.87	37.5	\$74,756.25	0				
21									
22									
23	Psychiatrists	half-days care per wk	full-days care per wk	# of FT psychiatrists req'd	psychiatrist wage (4)				
24	\$ 19,208,070	210	105	105	\$182,934.00				
25									
26	Online CBT software	patients requiring soft	cost per patient (5)						
27	\$ -	0	\$60.00						
28								Assumptions	
29								carpenter: \$70/hr	
								electricians: \$75/hr	
30	Expanding Existing PCNs	Cost/square foot	Total for one 48 square foot room (6)	Specifications	painters: \$27.50/hr				
31	\$3,904,512	\$124	\$5,952	6'x8' (comparable to Calgary Counselling Centre)					
32	42 PCNs expanded (656 new offices)			foundation insulated/finished walls					
33				vinyl siding carpet					
34				roofing windows					

35	Director of Operations - Alberta	(7)
36	\$ 318,774	(oversees population of 4.2 M)
37		
38	Regional Operations - North Zone	(8)
39	\$130,000	population 500,000
40	Regional Operations - Edmonton Zone	
41	\$170,000	population 1,300,000
42	Regional Operations - Central Zone	
43	\$130,000	population 500,000
44	Regional Operations - Calgary Zone	
45	\$190,000	population 1,600,000
46	Regional Operations - South Zone	
47	\$110,000	population 300,000
48		



49	Director of Communications	(9)
50	\$210,850	
51	Medical Consultant (liaison with MDs)	(10)
52	\$156,321	
53		
54	Total Senior Management	
55	\$1,415,945	
56		
57	Total Cost of Pilot Project	Cost/patient:
58	\$ 77,455,521	\$ 486.83
59		\$ 77.27

60 Endnotes

61 (1) Alberta Government
<https://occinfo.alis.alberta.ca/occinfopreview/info/browse-occupations/occupation-profile.html?id=71002221>

62 (2) Dr. John Grohol
<http://psychcentral.com/lib/your-first-psychotherapy-session/>

63 (3) Perini Titov Andrews 2009; Stott Wild Grey et al. 2013

64 (4) <http://www.payscale.com/research/CA/Job=Psychiatrist/Salary>

65 (5) <https://thiswayup.org.au/how-we-can-help/courses/depression/>

66 (6) <http://www.fixr.com/costs/add-new-space>

67 (7) salary matched to AHS Senior Provincial Medical Advisor (class: Executive Manager II)
<http://www.alberta.ca/salarydisclosure.cfm>

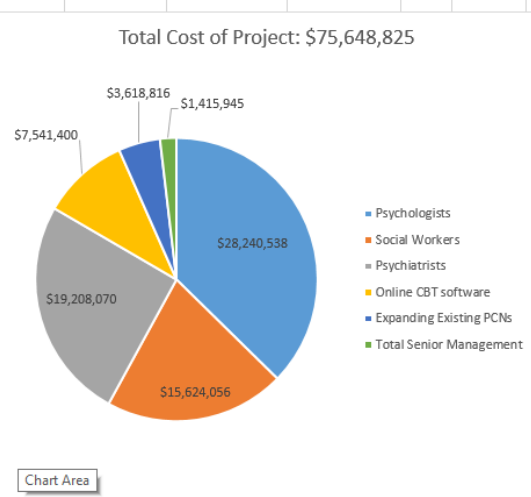
68 (8) salary based off AHS Chief Delivery Officer (class: Executive Manager I)
<http://www.alberta.ca/salarydisclosure.cfm>

69 (9) salary matched to Senior Official position
<http://www.alberta.ca/salarydisclosure.cfm>

70 (10) salary matched to Medical Consultant position
<http://www.alberta.ca/salarydisclosure.cfm>

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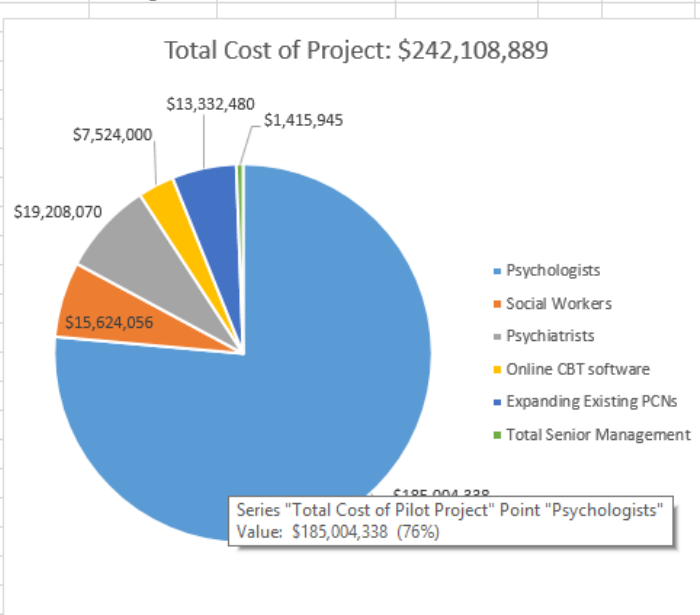
1	Appendix B (3 of 3)							
2	Psychologists	Median Wage/hour	Hours/week	Annual Salary	294 psychologists required			
3	\$ 28,240,538	\$ 51.23	37.5	\$ 96,056	\$28,240,537.50			
4								
5	use average between 1 psych/6250 residents and 1 psych/9000 residents = 1 psych / 7625 residents							
6	4.2 M / 7625 (1 psych per 7625 ppl) = 551 psychologists (if only face-to-face CBT)							
7	Alberta has 42 PCNs (551 psychologists/42 PCNs = 13.1 psychologists/PCN)							
8	Psychologists treat 7 people/day (2)							
9	7 session*551 psychologists = 3857 people treated per day			Determining # of sessions non-SMI patients utilize		Determining # of psych req. to treat non-SMI patients		
10	3857 people per day*5 days per week = 19285 people treated per week			Total	1002336.3	13.97849		
11	52 weeks / 6.3 weeks = 8.25 cycles per year			SMI	534576	8991.669		
12	19285 patients per cycle * 8.25 cycles per year = 159,101 patients treated per year			non-SMI	467566.8			
13				Total	1002142.8	8995	125736.5	
14	52 weeks / 16 weeks = 3.25 cycles per year			CHECK		551		
15	33,411 SMI patients per year / 3.25 cycles per year = 10,280 SMI patients per cycle						33411.21	
16							159,101 - 33,411 = 125,690 non-SMI patients	
17	calculation of # of required psychologists and social workers:							
18	551 551 total psychologists (w/o online therapy) (average between Thunder Bay case and IAPT)							
19	159,101 * 0.21 (SMI patients) = 33,411 SMI patients will need to be treated annually							
20	294 33,411 / 35 sessions per week / 3.25 cycles = 294 face-to-face psychologists needed							
21	social workers will be needed to support patients utilizing online CBT							
22	2.079245283 support-clinicians can see 2.079x more patients than face-to-face therapists can							
23	209	209.4833333 (vs 257; only 48 clinicians are avoided b/c non-SMI patients now take 13 weeks to graduate as compared to 3.72)						
24	503	total # of psychologists & social workers (with 209 iCBT support clinicians and 294 face-to-face psychologists)						
25							total patients treated	
26	Social Workers	Median Wage/hr (11)	hours/week	annual salary	total number of social workers required	125690 +	33411	159101
27	\$15,624,056	\$39.87	37.5	\$74,756.25	209			
28								
29	Psychiatrists	half-days care per wk	full-days care per wk	# of FT psychiatrists req'd	psychiatrist wage (4)			
30	\$ 19,208,070	210	105	105	\$182,934.00			
31								
32	Online CBT software	patients requiring soft	cost per patient (5)					
33	\$ 7,541,400	125690	\$60.00					
34								
35								
36	Expanding Existing PCNs	Cost/square foot	Total for one 48 square foot room (6)	Specifications	Assumptions			
37	\$3,618,816	\$124	\$5,952	6'x8' (comparable to Calgary Counselling Centre)	carpenter: \$70/hr			
38	42 PCNs expanded (430 new offices)			foundation	insulated/finished walls			
39				vinyl siding	carpet			
40				roofing	windows			
41	Director of Operations - Alberta (7)							
42	\$ 318,774	(oversees population of 4.2 M)						
43								
44	Regional Operations - North Zone (8)							
45	\$130,000	population 500,000						
46	Regional Operations - Edmonton Zone							
47	\$170,000	population 1,300,000						
48	Regional Operations - Central Zone							
49	\$130,000	population 500,000						
50	Regional Operations - Calgary Zone							
51	\$190,000	population 1,600,000						
52	Regional Operations - South Zone							
53	\$110,000	population 300,000						
54								
55	Director of Communications (9)							
56	\$210,850							
57	Medical Consultant (liaison with MDs) (10)							
58	\$156,321							
59								
60	Total Senior Management							
61	\$1,415,945							
62								



63	Total Cost of Pilot Project	Cost/patient:													
64	\$ 75,648,825	\$ 476.09													
65															
66	Endnotes														
67	(1)	Alberta Government													
68		https://occinfo.alis.alberta.ca/occinfopreview/info/browse-occupations/occupation-profile.html?id=71002221													
69	(2)	Dr. John Grohol													
70		http://psychcentral.com/lib/your-first-psychotherapy-session/													
71	(3)	Perini Titov Andrews 2009; Stott Wild Grey et al. 2013													
72	(4)	http://www.payscale.com/research/CA/Job=Psychiatrist/Salary													
73	(5)	https://thiswayup.org.au/how-we-can-help/courses/depression/													
74	(6)	http://www.fixr.com/costs/add-new-space													
75	(7)	salary matched to AHS Senior Provincial Medical Advisor (class: Executive Manager II)													
76		http://www.alberta.ca/salarydisclosure.cfm													
77	(8)	salary based off AHS Chief Delivery Officer (class: Executive Manager I)													
78		http://www.alberta.ca/salarydisclosure.cfm													
79	(9)	salary matched to Senior Official position													
80		http://www.alberta.ca/salarydisclosure.cfm													
81	(10)	salary matched to Medical Consultant position													
82		http://www.alberta.ca/salarydisclosure.cfm													
83	(11)	Alberta Government													
84		https://occinfo.alis.alberta.ca/occinfopreview/info/browse-occupations/occupation-profile.html?id=71002779													
85															

1	Worksheet to Accompany Section 5 of Capstone														
2	Psychologists	Median Wage/hour	Hours/week	Annual Salary	1926 psychologists required										
3	\$ 185,004,338	\$ 51.23	37.5	\$ 96,056	\$ 185,004,337.50										
4															
5	use average between 1 psych/6250 residents and 1 psych/9000 residents = 1 psych / 7625 residents														
6	4.2M / 7625 (1 psych per 7625 ppl) = 551 psychologists (if only face-to-face CBT)														
7	Alberta has 42 PCNs (551 psychologists/42 PCNs = 13.1 psychologists/PCN)														
8	Psychologists treat 7 people/day (2)														
9	7session*551 psychologists = 3857 people treated per day														
10	3857 people per day * 5 days per week = 19285 people treated per week														
11															
12	calculation of # of required psychologists:														
13	551 551 total (w/o online therapy) (average between Thunder Bay case and IAPT)														
14	-435 551*0.79 = 435 psychologists will not be needed due to online CBT														
15	however, some psychologists will be needed to support patients utilizing online CBT														
16	2.079245283 support psychologists can see 2.079x more patients than face-to-face therapists can														
17	+209	209.2105263													
18	325 total # of psychologists (with 79% (209) online CBT and 21% (116) face-to-face sessions)														
19															total patients treated
20	Social Workers	Median Wage/hr (11)	hours/week	annual salary	total number of social workers required	125400 +	33705	159105							
21	\$15,624,056	\$39.87	37.5	\$74,756.25	209										
23	Psychiatrists	half-days care per wk	full-days care per wk	# of FT psychiatrists req'd	psychiatrist wage (4)										
24	\$ 19,208,070	210	105	105	\$182,934.00										
25															
26	Online CBT software	patients requiring soft	cost per patient (5)												
27	\$ 7,524,000	125400	\$60.00												
28															
29															
30	Expanding Existing PCNs	Cost/square foot	Total for one 48 square foot room (6)	Specifications	Assumptions										
31	\$13,332,480	\$124	\$5,952	6'x8' (comparable to Calgary Counselling Centre)	carpenter: \$70/hr										
32	42 PCNs expanded (430 new offices)			foundation	insulated/finished walls	electricians: \$75/hr									
33				vinyl siding	carpet	painters: \$27.50/hr									
34				roofing	windows										

35	Director of Operations - Alberta	(7)
36	\$ 318,774	(oversees population of 4.2 M)
37		
38	Regional Operations - North Zone	(8)
39	\$130,000	population 500,000
40	Regional Operations - Edmonton Zone	
41	\$170,000	population 1,300,000
42	Regional Operations - Central Zone	
43	\$130,000	population 500,000
44	Regional Operations - Calgary Zone	
45	\$190,000	population 1,600,000
46	Regional Operations - South Zone	
47	\$110,000	population 300,000
48		
49	Director of Communications	(9)
50	\$210,850	
51	Medical Consultant (liaison with MDs)	(10)
52	\$156,321	
53		
54	Total Senior Management	
55	\$1,415,945	



56		
57	Total Cost of Pilot Project	Cost/patient:
58	\$ 242,108,889	\$ 1,521.69
59		
60	Endnotes	
61	(1)	Alberta Government
62		https://occinfo.alis.alberta.ca/occinfopreview/info/browse-occupations/occupation-profile.html?id=71002221
63	(2)	Dr. John Grohol
64		http://psychcentral.com/lib/your-first-psychotherapy-session/
65	(3)	Perini Titov Andrews 2009; Stott Wild Grey et al. 2013
66	(4)	http://www.payscale.com/research/CA/Job=Psychiatrist/Salary
67	(5)	https://thiswayup.org.au/how-we-can-help/courses/depression/
68	(6)	http://www.fixr.com/costs/add-new-space
69	(7)	salary matched to AHS Senior Provincial Medical Advisor (class: Executive Manager II)
70		http://www.alberta.ca/salarydisclosure.cfm
71	(8)	salary based off AHS Chief Delivery Officer (class: Executive Manager I)
72		http://www.alberta.ca/salarydisclosure.cfm
73	(9)	salary matched to Senior Official position
74		http://www.alberta.ca/salarydisclosure.cfm
75	(10)	salary matched to Medical Consultant position
76		http://www.alberta.ca/salarydisclosure.cfm
77	(11)	Alberta Government
78		https://occinfo.alis.alberta.ca/occinfopreview/info/browse-occupations/occupation-profile.html?id=71002779

10.3 Appendix C: Cost-savings

1	Appendix C (1 of 3)				
2	Breaking out Direct Healthcare Costs into those Attributed to SMI patients and those Attributed to non-SMI patients				
3	SMI patients: severe and debilitating mental illness (schizophrenia, bipolar disorder, severe depression, OCD, etc.)				
4	non-SMI patients: non-debilitating mental illness (anxiety, mild depression, various phobias, etc.)				
5	Determining the % of Direct Healthcare Costs Associated with Each Group	Source			
6	cost to U.S.A. due to SMI patients (2002)	\$ 100,100,000,000	(1)		
7	# of SMI patients in U.S.A. (2002)	11,823,129	(2) (3)	average of two sources: 4.2% and 4.0% = 4.1% prevalence of SMI	
8	cost to U.S.A. healthcare system per American SMI patient (2002)	\$ 8,466.46			
9					
10	# of SMI patients in Alberta (assuming same SMI % of population as in U.S.A.)	172,200			
11	total cost of SMI patients to AB healthcare (assuming American per SMI capita costs)	\$ 1,457,923,702			
12					
13	total direct costs of untreated mental illness in AB	\$ 2,300,000,000	(4)		
14	% of total direct healthcare costs attributed to SMI patients (own calculations)	63%			
15	% of total direct healthcare costs attributed to non-SMI patients (own calculations)	37%			
16	% of total costs attributed to SMI patients (Cuijpers et al.)	55%	(5)		
17	% of total costs attributed to non-SMI patients (Cuijpers et al.)	45%			
18	average % of costs attributed to SMI patients (own calc and Cuijpers et al)	59%			
19	average % of costs attributed to non-SMI patients (own calc and Cuijpers et al)	41%			
20	Determining the \$ value of Direct Healthcare Costs Associated with Each Group				
21	total direct costs of untreated mental illness in AB	\$ 2,300,000,000			
22	direct healthcare costs of untreated mental illness attributed to non-SMI patients (41%)	\$ 943,000,000			
23	direct healthcare cost savings from treatment of non-SMI patients (100% uptake rate)	57% \$ 537,510,000	(6)		
24	direct healthcare cost savings from treatment of non-SMI patients (46% uptake rate)	\$ 247,254,600	(7)		
25					
26	direct healthcare costs of untreated mental illness attributed to SMI patients (59%)	\$ 1,357,000,000			
27	direct healthcare cost savings from treatment of SMI patients (scenario 1)	0% \$ -			
28	direct healthcare cost savings from treatment of SMI patients (scenario 2)	0% \$ -			
29	direct healthcare cost savings from treatment of SMI patients (scenario 3)	0% \$ -			
30	Various Scenarios (with 46% uptake rate)				
31	57% + 11%	\$ 247,254,600			
32	57% + 27%	\$ 247,254,600			
33	57% + 42%	\$ 247,254,600			
34	57% (only treating non-SMI patients through iCBT)	\$ 247,254,600	<-		
35	11% (only treating SMI patients through face-to-face therapy, assuming LOW recovery)	\$ -			
36	27% (only treating SMI patients through face-to-face therapy, assuming MEDIUM recovery)	\$ -			
37	42% (only treating SMI patients through face-to-face therapy, assuming HIGH recovery)	\$ -			
38	Limitations of Calculations				
39	assumes 2002 rate of SMI is equivalent to 2016 rate				
40	assumes that prevalence of SMIs are identical in Canada, U.S.A., and Netherlands				
41					
42	Sources				
43	(1) http://www.nlm.nih.gov/health/statistics/cost/index.shtml				
44	(2) https://www.census.gov/popest/data/historical/2000s/vintage_2002/ ; population on July 1, 2002				
45	(3) https://www.nami.org/Learn-More/Mental-Health-By-the-Numbers ; http://www.nlm.nih.gov/about/director/2015/mental-health-awareness-month-by-the-numbers.shtml				
46	(4) Smetanin et al.				
47	(5) Cuijpers et al., "Economic costs of minor depression: a population-based study," <i>Acta Psychiatrica Scandinavica</i> , 115(3): 229-236, 2007				
48	(6) THIS WAY UP, Stott Wild Grey et al. 2013				
49	(7) CIHI 7030 Split				

1	Appendix C (2 of 3)				
2	Breaking out Direct Healthcare Costs into those Attributed to SMI patients and those Attributed to non-SMI patients				
3	SMI patients: severe and debilitating mental illness (schizophrenia, bipolar disorder, severe depression, OCD, etc.)				
4	non-SMI patients: non-debilitating mental illness (anxiety, mild depression, various phobias, etc.)				
5	Determining the % of Direct Healthcare Costs Associated with Each Group	Source			
6	cost to U.S.A. due to SMI patients (2002)	\$ 100,100,000,000	(1)		
7	# of SMI patients in U.S.A. (2002)	11,823,129	(2) (3)	average of two sources: 4.2% and 4.0% = 4.1% prevalence of SMI	
8	cost to U.S.A. healthcare system per American SMI patient (2002)	\$ 8,466.46			
9					
10	# of SMI patients in Alberta (assuming same SMI % of population as in U.S.A.)	172,200			
11	total cost of SMI patients to AB healthcare (assuming American per SMI capita costs)	\$ 1,457,923,702			
12					
13	total direct costs of untreated mental illness in AB	\$ 2,300,000,000	(4)		
14	% of total direct healthcare costs attributed to SMI patients (own calculations)	63%			
15	% of total direct healthcare costs attributed to non-SMI patients (own calculations)	37%			
16	% of total costs attributed to SMI patients (Cuijpers et al.)	55%	(5)		
17	% of total costs attributed to non-SMI patients (Cuijpers et al.)	45%			
18	average % of costs attributed to SMI patients (own calc and Cuijpers et al)	59%			
19	average % of costs attributed to non-SMI patients (own calc and Cuijpers et al)	41%			
20	Determining the \$ value of Direct Healthcare Costs Associated with Each Group				
21	total direct costs of untreated mental illness in AB	\$ 2,300,000,000			
22	direct healthcare costs of untreated mental illness attributed to non-SMI patients (41%)	\$ 943,000,000			
23	direct healthcare cost savings from treatment of non-SMI patients (100% uptake rate)	57% \$ 537,510,000	(6)		
24	direct healthcare cost savings from treatment of non-SMI patients (46% uptake rate)	\$ 247,254,600	(7)		
25					
26	direct healthcare costs of untreated mental illness attributed to SMI patients (59%)	\$ 1,357,000,000			
27	direct healthcare cost savings from treatment of SMI patients (scenario 1) [100% uptake]	\$ 149,270,000			
28	direct healthcare cost savings from treatment of SMI patients (scenario 1) [46% uptake]	\$ 68,664,200			
29	direct healthcare cost savings from treatment of SMI patients (scenario 2) [100% uptake]	\$ 366,390,000			

30	direct healthcare cost savings from treatment of SMI patients (scenario 2) [46% uptake]		\$	168,539,400				
31	direct healthcare cost savings from treatment of SMI patients (scenario 3) [100% uptake]	42%	\$	569,940,000				
32	direct healthcare cost savings from treatment of SMI patients (scenario 3) [46% uptake]		\$	262,172,400				
33	Various Scenarios (with 46% uptake rate)							
34	57% + 11%		\$	315,918,800				
35	57% + 27%		\$	415,794,000				
36	57% + 42%		\$	509,427,000				
37	57% (only treating non-SMI patients through iCBT)		\$	247,254,600				
38	11% (only treating SMI patients through face-to-face therapy, assuming LOW recovery)		\$	68,664,200				
39	27% (only treating SMI patients through face-to-face therapy, assuming MEDIUM recovery)		\$	168,539,400				
40	42% (only treating SMI patients through face-to-face therapy, assuming HIGH recovery)		\$	262,172,400				
41	Limitations of Calculations							
42	assumes 2002 rate of SMI is equivalent to 2016 rate							
43	assumes that prevalence of SMIs are identical in Canada, U.S.A., and Netherlands							
44								
45	Sources							
46	(1) http://www.nlm.nih.gov/health/statistics/cost/index.shtml							
47	(2) https://www.census.gov/popest/data/historical/2000s/vintage_2002/ ; population on July 1, 2002							
48	(3) https://www.nami.org/Learn-More/Mental-Health-By-the-Numbers ; http://www.nlm.nih.gov/about/director/2015/mental-health-awareness-month-by-the-numbers.shtml							
49	(4) Smetanin et al.							
50	(5) Cuijpers et al., "Economic costs of minor depression: a population-based study," <i>Acta Psychiatrica Scandinavica</i> , 115(3): 229-236, 2007							
51	(6) THIS WAY UP, Stott Wild Grey et al. 2013							
52	(7) CIHI 7030 Split							
53								

1	Appendix C (3 of 3)							
2	Breaking out Direct Healthcare Costs into those Attributed to SMI patients and those Attributed to non-SMI patients							
3	SMI patients: severe and debilitating mental illness (schizophrenia, bipolar disorder, severe depression, OCD, etc.)							
4	non-SMI patients: non-debilitating mental illness (anxiety, mild depression, various phobias, etc.)							
5	Determining the % of Direct Healthcare Costs Associated with Each Group							
6	cost to U.S.A. due to SMI patients (2002)		\$	100,100,000,000			Source	
7	# of SMI patients in U.S.A. (2002)			11,823,129	(2) (3)		average of two sources: 4.2% and 4.0% = 4.1% prevalence of SMI	
8	cost to U.S.A. healthcare system per American SMI patient (2002)		\$	8,466.46				
9								
10	# of SMI patients in Alberta (assuming same SMI % of population as in U.S.A.)			172,200				
11	total cost of SMI patients to AB healthcare (assuming American per SMI capita costs)		\$	1,457,923,702				
12								
13	total direct costs of untreated mental illness in AB		\$	2,300,000,000	(4)			
14	% of total direct healthcare costs attributed to SMI patients (own calculations)			63%				
15	% of total direct healthcare costs attributed to non-SMI patients (own calculations)			37%				
16	% of total costs attributed to SMI patients (Cuijpers et al.)			55%	(5)			
17	% of total costs attributed to non-SMI patients (Cuijpers et al.)			45%				
18	average % of costs attributed to SMI patients (own calc and Cuijpers et al)			59%				
19	average % of costs attributed to non-SMI patients (own calc and Cuijpers et al)			41%				
20	Determining the \$ value of Direct Healthcare Costs Associated with Each Group							
21	total direct costs of untreated mental illness in AB		\$	2,300,000,000				
22	direct healthcare costs of untreated mental illness attributed to non-SMI patients (41%)		\$	943,000,000				
23	direct healthcare cost savings from treatment of non-SMI patients (100% uptake rate)	57%	\$	537,510,000	(6)			
24	direct healthcare cost savings from treatment of non-SMI patients (46% uptake rate)		\$	247,254,600				
25								
26	direct healthcare costs of untreated mental illness attributed to SMI patients (59%)		\$	1,357,000,000				
27	direct healthcare cost savings from treatment of SMI patients (scenario 1) [100% uptake]	11%	\$	149,270,000				
28	direct healthcare cost savings from treatment of SMI patients (scenario 1) [46% uptake]		\$	68,664,200				
29	direct healthcare cost savings from treatment of SMI patients (scenario 2) [100% uptake]	27%	\$	366,390,000				
30	direct healthcare cost savings from treatment of SMI patients (scenario 2) [46% uptake]		\$	168,539,400				
31	direct healthcare cost savings from treatment of SMI patients (scenario 3) [100% uptake]	42%	\$	569,940,000				
32	direct healthcare cost savings from treatment of SMI patients (scenario 3) [46% uptake]		\$	262,172,400				
33	Various Scenarios (with 46% uptake rate)							
34	57% + 11%		\$	315,918,800				
35	57% + 27%		\$	415,794,000				
36	57% + 42%		\$	509,427,000				
37	57% (only treating non-SMI patients through iCBT)		\$	247,254,600				
38	11% (only treating SMI patients through face-to-face therapy, assuming LOW recovery)		\$	68,664,200				
39	27% (only treating SMI patients through face-to-face therapy, assuming MEDIUM recovery)		\$	168,539,400				
40	42% (only treating SMI patients through face-to-face therapy, assuming HIGH recovery)		\$	262,172,400				
41	Limitations of Calculations							
42	assumes 2002 rate of SMI is equivalent to 2016 rate							
43	assumes that prevalence of SMIs are identical in Canada, U.S.A., and Netherlands							
44								
45	Sources							
46	(1) http://www.nlm.nih.gov/health/statistics/cost/index.shtml							
47	(2) https://www.census.gov/popest/data/historical/2000s/vintage_2002/ ; population on July 1, 2002							
48	(3) https://www.nami.org/Learn-More/Mental-Health-By-the-Numbers ; http://www.nlm.nih.gov/about/director/2015/mental-health-awareness-month-by-the-numbers.shtml							
49	(4) Smetanin et al.							
50	(5) Cuijpers et al., "Economic costs of minor depression: a population-based study," <i>Acta Psychiatrica Scandinavica</i> , 115(3): 229-236, 2007							
51	(6) THIS WAY UP, Stott Wild Grey et al. 2013							